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NARRATIVE REVIEW

The Impact of Erectile Dysfunction on Quality of Life and Mental Health in Men

a narrative review

HIGHLIGHTS

- Erectile dysfunction (ED) is a multifactorial condition affecting 20–40% of men, rising to >50% in men aged 40–70 years — with vascular, hormonal, neurological and psychogenic mechanisms.
- ED is bidirectionally linked with depression and anxiety: psychological distress worsens erectile function, while repeated erectile failure undermines self-esteem and masculinity.
- ED is an early marker of systemic vascular disease and metabolic syndrome, often preceding

overt cardiovascular events by several years and signalling type 2 diabetes risk.

- Quality of life is impaired across emotional, social and relational domains — partners are also affected, making couple-centred assessment essential (IIEF, SF-36).
- Optimal care is holistic and multidisciplinary: PDE5 inhibitors (sildenafil, tadalafil), psychosexual therapy and lifestyle modification jointly improve erectile function and mental health.

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ABSTRACT

BACKGROUND: Erectile dysfunction (ED) is a prevalent and multifactorial condition affecting men worldwide, with vascular, hormonal, neurological and psychological factors contributing to its development. Beyond impairing sexual performance, ED has significant consequences for mental health, quality of life and interpersonal relationships, and may serve as an early indicator of systemic diseases such as cardiovascular disease and metabolic syndrome.

AIM: To synthesise current evidence on the impact of erectile dysfunction on quality of life and mental health in men, and to outline an integrated biopsychosocial framework for clinical assessment and management.

MATERIALS AND METHODS: A narrative review of peer-reviewed literature was performed, drawing on epidemiological studies (including the Massachusetts Male Aging Study), meta-analyses on the bidirectional ED–depression association, and clinical reviews of pharmacological, psychosexual and lifestyle interventions.

RESULTS: Men with ED frequently experience depression, anxiety, reduced self-esteem and relational difficulties. Endothelial dysfunction underlying ED commonly precedes overt cardiovascular events, while metabolic syndrome and type 2 diabetes are closely co-morbid. Pharmacological treatment with phosphodiesterase type 5 inhibitors (sildenafil, tadalafil), psychosexual therapy and lifestyle modification consistently improve both erectile function and psychological well-being. Quality of life is impaired across emotional, social and relational domains, also affecting partners.

CONCLUSIONS: ED should be recognised as a multidimensional, biopsychosocial condition rather than a purely sexual problem. A holistic, multidisciplinary approach involving primary care physicians, urologists and mental health professionals is essential to optimise outcomes, address both physiological and psychosocial aspects, and enhance quality of life and overall health in affected men.

KEYWORDS erectile dysfunction; mental health; depression; anxiety; quality of life; cardiovascular disease; metabolic syndrome; psychosexual therapy.

GRAPHICAL ABSTRACT

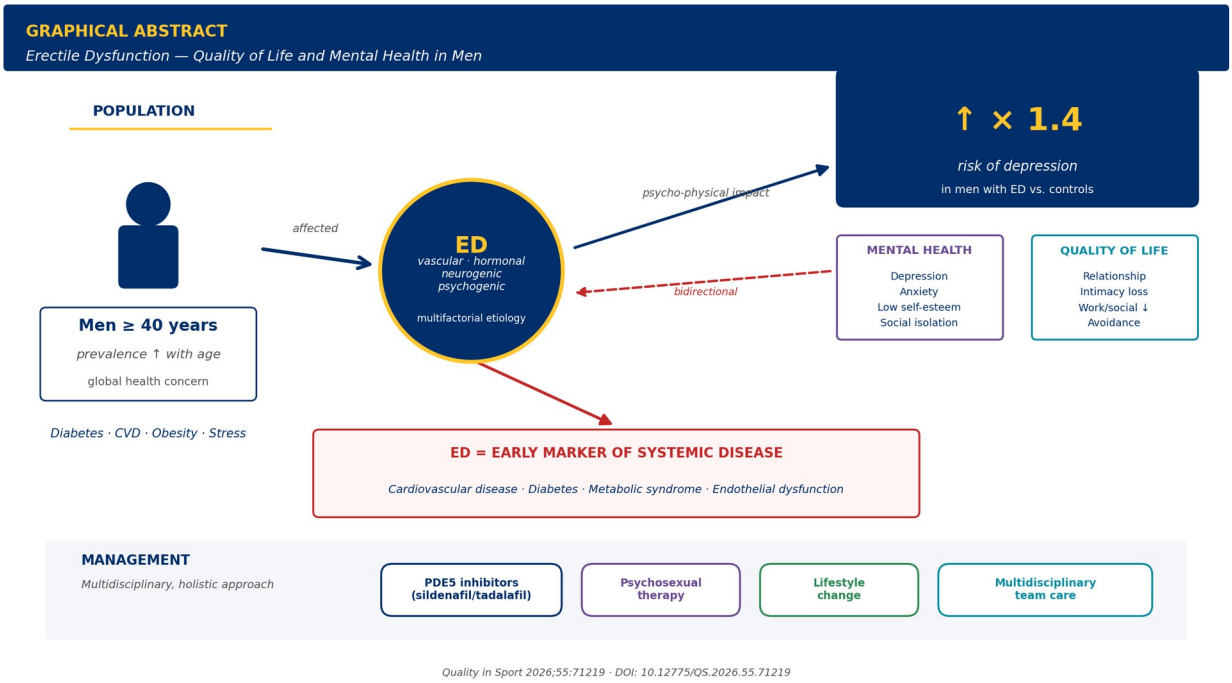

Figure 1. *Graphical overview of erectile dysfunction — from multifactorial etiology (vascular, hormonal, neurological, psychogenic) through clinical consequences (depression, anxiety, reduced self-esteem, impaired quality of life, CVD and metabolic comorbidity) to integrated multidisciplinary management combining PDE5 inhibitors, psychosexual therapy and lifestyle modification.*

PLAIN LANGUAGE SUMMARY

Erectile dysfunction (ED) is the persistent inability to achieve or maintain an erection good enough for satisfying sex. It is very common — around 20–40% of men have it to some degree, and more than half of men aged 40–70. ED has many causes: problems with blood vessels (the same processes that lead to heart attacks), low testosterone, nerve disorders such as diabetes-related neuropathy, and psychological factors such as stress, anxiety and depression. Because of this, the appearance of ED is often an early warning sign of cardiovascular disease, type 2 diabetes or metabolic syndrome — sometimes years before any chest pain or heart attack. ED also takes a serious toll on mental health and quality of life. Men with ED are more likely to experience depression, anxiety, shame, low self-esteem and a sense of ‘failed’ masculinity; they may avoid intimacy and withdraw from their partner and from social life. The good news is that ED is highly treatable. Tablets such as sildenafil and tadalafil work for most men and often improve mood and confidence at the same time. Psychosexual therapy and couples counselling help with performance anxiety,

communication and intimacy. Lifestyle changes — regular exercise, weight loss, stopping smoking, better control of diabetes and blood pressure — improve both erections and general health. The most effective approach combines all three: a family doctor or urologist who screens for heart and metabolic risk, a mental health professional who supports the patient and his partner, and the man himself making sustainable lifestyle changes.

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1. INTRODUCTION

Erectile dysfunction (ED) is a common male sexual disorder defined as the persistent inability to achieve or maintain an erection sufficient for satisfactory sexual performance. It affects men of all ages, with prevalence increasing significantly with advancing age and the presence of comorbid conditions such as diabetes, cardiovascular disease, and obesity [1]. Beyond its physical implications, ED is increasingly recognized as a condition with profound psychological and psychosocial consequences.

A growing body of evidence suggests that ED is closely associated with impaired quality of life and reduced psychological well-being. Men experiencing ED often report decreased self-esteem, feelings of inadequacy, and diminished life satisfaction [2]. Sexual health is an integral component of overall well-being, and disturbances in sexual function may negatively affect multiple domains of life, including emotional health, interpersonal relationships, and social functioning.

Importantly, the relationship between ED and mental health appears to be bidirectional. On one hand, ED can lead to the development of psychological disorders such as depression and anxiety due to stress, performance concerns, and perceived loss of masculinity. On the other hand, pre-existing mental health conditions may contribute to the onset or exacerbation of ED through psychogenic mechanisms and neuroendocrine dysregulation [3]. This complex interaction creates a vicious cycle in which psychological distress worsens erectile function, further impairing mental health.

Additionally, ED has been identified as an early marker of systemic vascular disease, which may further contribute to psychological burden following diagnosis of chronic illness [4]. The awareness of underlying health risks may intensify anxiety and negatively impact perceived quality of life.

Given the multifactorial nature of ED and its significant impact on both physical and mental health, a comprehensive understanding of its effects on quality of life and psychological well-being is essential. This study aims to explore the relationship between erectile dysfunction, quality of life, and mental health outcomes in men, highlighting the need for an integrated biopsychosocial approach in clinical practice.

2. EPIDEMIOLOGY AND DEFINITION OF ERECTILE DYSFUNCTION

Erectile dysfunction (ED) is defined as the persistent inability to achieve or maintain an erection sufficient for satisfactory sexual performance [1]. This definition, widely accepted in clinical practice, emphasizes both the functional and subjective aspects of sexual health. ED may result from organic, psychogenic, or mixed etiologies, and its classification is essential for appropriate diagnosis and management.

ED is a highly prevalent condition affecting men worldwide, with its incidence increasing significantly with age. Epidemiological data indicate that approximately 20–40% of men experience some degree of ED, with prevalence rising to over 50% in men aged 40–70 years [5]. One of the most influential population-based studies, the Massachusetts Male Aging Study (MMAS), reported that the overall prevalence of ED was 52% among men aged 40–70 years, with varying degrees of severity [5].

In addition to age, several risk factors have been identified that contribute to the development of ED. These include chronic conditions such as diabetes mellitus, cardiovascular disease, hypertension, obesity, and metabolic syndrome [1,6]. Lifestyle factors, including smoking, physical inactivity, and excessive alcohol consumption, also play a significant role. Importantly, ED is increasingly recognized as an early marker of systemic vascular disease, often preceding clinically overt cardiovascular events by several years [6].

The global burden of ED is expected to increase substantially due to population aging and the rising prevalence of lifestyle-related diseases. It has been estimated that the number of men affected by ED will

exceed 300 million worldwide by 2025 [7]. Despite its high prevalence, ED remains underdiagnosed and undertreated, partly due to social stigma, lack of awareness, and reluctance to seek medical help.

Understanding the epidemiology and definition of ED is crucial for identifying at-risk populations and implementing early interventions. Given its multifactorial etiology and association with systemic diseases, ED should be considered not only a sexual health issue but also an important component of overall male health.

3. PATHOPHYSIOLOGY OF ERECTILE DYSFUNCTION

Erectile function is a complex physiological process involving the integration of vascular, neurological, hormonal, and psychological mechanisms. Disruption at any level of this system may result in erectile dysfunction (ED), which is therefore considered a multifactorial condition with both organic and psychogenic components [1].

3.1. Vascular Mechanisms

The vascular component plays a central role in penile erection, which is primarily a hemodynamic event dependent on adequate arterial inflow and restricted venous outflow. Endothelial function is critical in this process, as nitric oxide (NO) released from endothelial cells mediates smooth muscle relaxation in the corpus cavernosum, allowing increased blood flow [8]. Endothelial dysfunction, commonly associated with conditions such as atherosclerosis, diabetes, and hypertension, leads to impaired NO bioavailability and reduced vasodilation, resulting in ED. Importantly, ED is often considered an early manifestation of systemic endothelial dysfunction and may precede cardiovascular disease [6].

3.2. Hormonal Factors

Hormonal regulation, particularly testosterone levels, is essential for normal erectile function. Testosterone influences libido, nitric oxide synthase activity, and overall penile tissue health [1]. Hypogonadism has been associated with reduced sexual desire and impaired erectile function. Low testosterone levels may also exacerbate endothelial dysfunction and contribute to structural changes within penile tissue. However, the relationship between testosterone and ED is complex, and not all men with ED present with clinically significant androgen deficiency [9].

3.3. Neurological Mechanisms

Erection is controlled by a coordinated interaction between the central and peripheral nervous systems. Parasympathetic activation promotes erection through the release of nitric oxide, while sympathetic activity is primarily involved in detumescence [8]. Neurological disorders such as spinal cord injury, multiple sclerosis, and diabetic neuropathy can impair neural signaling pathways necessary for erection. Additionally, disruption of central pathways involved in sexual arousal may contribute to ED.

3.4. Organic vs Psychogenic Erectile Dysfunction

ED is traditionally classified into organic and psychogenic types, although mixed forms are common. Organic ED is associated with identifiable physiological abnormalities, including vascular, hormonal, or neurological dysfunction. In contrast, psychogenic ED is related to psychological factors such as anxiety, depression, or relationship issues. Psychogenic ED often presents with sudden onset, situational variability, and preserved nocturnal erections, whereas organic ED typically has a gradual onset and progressive course [1].

3.5. Role of Stress and the Hypothalamic–Pituitary–Adrenal (HPA) Axis

Chronic stress plays a significant role in the development and exacerbation of ED. Activation of the hypothalamic–pituitary–adrenal (HPA) axis leads to increased cortisol levels, which may negatively affect

sexual function through multiple mechanisms, including suppression of testosterone production and impairment of endothelial function [10]. Additionally, heightened sympathetic nervous system activity associated with stress may inhibit erection by promoting vasoconstriction and reducing penile blood flow. Psychological stress and performance anxiety can further perpetuate ED, contributing to a self-reinforcing cycle of dysfunction.

4. PSYCHOLOGICAL CONSEQUENCES OF ERECTILE DYSFUNCTION

Erectile dysfunction (ED) has significant psychological consequences that extend beyond sexual performance, affecting emotional well-being, self-perception, and social functioning. Increasing evidence highlights a strong association between ED and various mental health disorders, particularly depression and anxiety, as well as broader psychosocial impairments [1].

4.1. Association with Depression

Numerous studies have demonstrated a strong link between ED and depressive symptoms. Men with ED are significantly more likely to experience depression compared to those without sexual dysfunction [11]. The presence of ED may lead to feelings of inadequacy, frustration, and loss of self-worth, which contribute to the development of depressive symptoms. Conversely, depression itself may impair sexual desire and erectile function through neurobiological and behavioral mechanisms, reinforcing a bidirectional relationship between these conditions [3].

4.2. Association with Anxiety Disorders

ED is also closely associated with anxiety, particularly performance anxiety related to sexual activity. Fear of failure during sexual intercourse may lead to anticipatory anxiety, which further exacerbates erectile difficulties [1]. This creates a self-perpetuating cycle in which anxiety impairs sexual performance, and repeated failures increase anxiety levels. Generalized anxiety and stress-related disorders may additionally contribute to ED through increased sympathetic nervous system activity and impaired relaxation necessary for erection.

4.3. Self-Esteem, Shame, and Masculinity

Sexual function is often closely tied to male identity and perceptions of masculinity. As a result, ED may have a profound impact on self-esteem and body image. Many men experiencing ED report feelings of shame, embarrassment, and diminished sense of masculinity [2]. Cultural and societal expectations regarding male sexual performance may further intensify these feelings, discouraging men from seeking medical help and contributing to psychological distress.

4.4. Avoidance of Sexual Activity

Men with ED frequently develop avoidance behaviors related to sexual activity. Repeated experiences of erectile failure may lead to reduced sexual initiation and withdrawal from intimate situations in order to avoid embarrassment or perceived inadequacy [11]. Over time, this avoidance can negatively affect intimate relationships and reduce overall relationship satisfaction.

4.5. Social Isolation

The psychological burden of ED may extend beyond the sexual domain, leading to broader social consequences. Feelings of inadequacy and fear of judgment may contribute to withdrawal from social interactions and decreased engagement in romantic relationships [2]. In severe cases, this may result in social isolation, further exacerbating depressive and anxiety symptoms and reducing overall quality of life.

5. IMPACT ON QUALITY OF LIFE

Erectile dysfunction (ED) has a profound impact on men's overall quality of life (QoL), affecting not only sexual function but also emotional, social, and relational domains. Quality of life is a multidimensional construct encompassing physical health, psychological well-being, social relationships, and the ability to perform everyday activities [1]. ED can compromise each of these dimensions, leading to reduced life satisfaction and diminished well-being.

The emotional impact of ED is substantial. Men experiencing ED frequently report feelings of frustration, embarrassment, and loss of self-confidence, which may exacerbate depressive and anxiety symptoms [2]. These emotional disturbances often contribute to a negative feedback loop, where psychological distress further impairs sexual function.

Social aspects of QoL are also affected. ED may lead to reduced participation in social interactions due to fear of judgment or perceived inadequacy, resulting in social withdrawal and isolation [11]. These limitations in social engagement can diminish overall life satisfaction and reinforce feelings of loneliness or exclusion.

Relational or partner-related aspects represent another critical area affected by ED. Intimate relationships may suffer as a result of decreased sexual activity, avoidance of intimacy, and communication difficulties. Partners may experience frustration or misunderstanding, which can strain relationships and reduce relational satisfaction [2,12]. This bidirectional impact emphasizes the importance of considering both the patient and their partner when assessing QoL outcomes.

Several validated tools have been developed to measure the impact of ED on quality of life. The International Index of Erectile Function (IIEF) is widely used to assess sexual function and its effect on well-being, while instruments such as the Short Form-36 Health Survey (SF-36) provide a broader evaluation of physical, emotional, and social health [1,12]. Utilizing these standardized tools allows clinicians and researchers to quantify the multidimensional effects of ED and evaluate the efficacy of interventions aimed at improving both sexual function and overall quality of life.

In summary, ED significantly impairs quality of life across emotional, social, and relational domains. Recognition of this impact is essential for comprehensive patient care, highlighting the need for interventions that address not only the physiological but also the psychological and social consequences of erectile dysfunction.

6. ERECTILE DYSFUNCTION AS A MARKER OF SYSTEMIC DISEASE

Erectile dysfunction (ED) is increasingly recognized not only as a sexual disorder but also as an early marker of systemic diseases, particularly cardiovascular disease and metabolic syndrome. Vascular dysfunction is a common underlying mechanism linking ED with these conditions. Endothelial dysfunction, a key factor in atherosclerosis, impairs nitric oxide-mediated vasodilation in penile arteries and is often present before clinical manifestations of cardiovascular disease, such as myocardial infarction or stroke [1,6]. Consequently, the onset of ED may precede overt cardiovascular events by several years, providing a critical window for early detection and intervention.

Similarly, ED is closely associated with metabolic syndrome, a cluster of conditions including insulin resistance, hypertension, dyslipidemia, and central obesity. These metabolic disturbances contribute to vascular and hormonal alterations that compromise erectile function [13]. Studies have demonstrated that men with ED are at significantly higher risk of developing type 2 diabetes mellitus and other components of metabolic syndrome, underscoring the role of ED as a sentinel symptom of underlying metabolic pathology [14].

The diagnosis of systemic disease in men presenting with ED can also have profound psychological implications. Awareness of a chronic illness, such as cardiovascular disease or diabetes, may exacerbate anxiety, depressive symptoms, and stress related to sexual performance [11]. These psychological consequences may further impair erectile function, creating a bidirectional relationship between physical and mental health. Thus, ED represents not only a marker for somatic disease but also a signal for potential psychological distress, emphasizing the need for a holistic approach in clinical evaluation.

In clinical practice, recognizing ED as an early indicator of systemic disease provides opportunities for timely interventions aimed at reducing cardiovascular and metabolic risk, while simultaneously addressing the psychosocial aspects of sexual dysfunction. Integrating medical, psychological, and lifestyle interventions may improve both overall health outcomes and quality of life in affected men.

7. TREATMENT AND ITS IMPACT ON MENTAL HEALTH

The management of erectile dysfunction (ED) involves a combination of pharmacological, psychological, and lifestyle interventions, all of which can significantly influence mental health outcomes. Pharmacological treatment, particularly the use of phosphodiesterase type 5 inhibitors (PDE5i) such as sildenafil and tadalafil, has been shown to improve erectile function effectively and rapidly in most patients [1]. Beyond restoring sexual performance, these medications often lead to improvements in psychological well-being, including reductions in depressive and anxiety symptoms, by alleviating performance-related stress and enhancing self-esteem [15].

Psychosexual therapy is another cornerstone of ED management, particularly in cases with psychogenic or mixed etiology. Cognitive-behavioral therapy, couples counseling, and sexual counseling help patients and their partners address performance anxiety, communication barriers, and relational difficulties [16]. Such interventions not only improve sexual function but also enhance emotional intimacy, reduce feelings of shame, and contribute to better overall mental health.

Lifestyle modifications play a complementary role in both the treatment of ED and the improvement of psychological outcomes. Regular physical activity, weight management, smoking cessation, moderation of alcohol consumption, and management of comorbid conditions such as diabetes or hypertension have been associated with significant improvements in erectile function [14]. These changes also exert beneficial effects on mood, stress reduction, and overall quality of life, highlighting the interconnected nature of physical and mental health in men with ED.

Evidence suggests that a combined approach integrating pharmacological treatment, psychosexual therapy, and lifestyle interventions yields the most robust benefits. Restoration of erectile function through these strategies has been linked to reductions in depressive symptoms, decreased anxiety levels, and overall improvements in quality of life [1,15,16]. By addressing both the physiological and psychological dimensions of ED, clinicians can mitigate the negative mental health consequences associated with this condition and promote a holistic improvement in patient well-being.

8. CLINICAL IMPLICATIONS

The complex interplay between erectile dysfunction (ED), physical health, and psychological well-being underscores the need for a holistic approach to patient care. Clinicians should recognize that ED is not merely a sexual disorder but a condition with multidimensional consequences affecting mental health, quality of life, and even serving as an early marker of systemic disease [1,6]. Consequently, management strategies should integrate both medical and psychosocial interventions to address the full spectrum of patient needs.

Routine screening for depression and anxiety in men presenting with ED is essential. Studies have demonstrated a high prevalence of depressive and anxiety symptoms in this population, which can both contribute to and result from sexual dysfunction [3]. Early identification of psychological comorbidities allows timely referral and intervention, potentially preventing a vicious cycle in which mental health problems exacerbate ED.

Effective management often requires a multidisciplinary approach. Collaboration between primary care physicians, urologists, and mental health professionals—including psychiatrists and psychologists—is critical for comprehensive care [1,16]. Primary care physicians play a key role in initial screening, risk factor modification, and coordination of care. Urologists provide specialized assessment and treatment of organic causes, including pharmacological and procedural interventions. Psychiatrists and psychologists address underlying or resulting mental health disorders and provide psychosexual counseling when appropriate. This integrated care model ensures that both somatic and psychological aspects of ED are addressed, improving clinical outcomes and overall patient well-being.

Holistic management not only improves erectile function but also enhances quality of life, reduces depressive and anxiety symptoms, and strengthens relational and social functioning. By adopting a biopsychosocial approach, clinicians can optimize both physical and mental health outcomes in men with ED, reflecting the evolving understanding of this condition as a systemic and psychosocial concern rather than a purely sexual problem.

9. FUTURE DIRECTIONS

Despite considerable advances in understanding the relationship between erectile dysfunction (ED), physical health, and mental well-being, several areas warrant further research. Prospective studies are particularly needed to elucidate causal relationships between ED and psychological disorders, as most existing evidence is derived from cross-sectional studies, which limit inferences regarding temporal dynamics [1,3]. Longitudinal research would help clarify the directionality of the association between ED, depression, anxiety, and systemic diseases, as well as identify potential mediating factors.

The development of predictive models represents another promising area for future investigation. Integrating clinical, biochemical, psychological, and lifestyle variables into risk stratification tools could enable earlier identification of men at high risk of ED and related comorbidities. Such models could inform personalized interventions, optimize treatment outcomes, and facilitate preventive strategies [6].

Finally, there is a growing need for integrated care approaches that address both somatic and psychological aspects of ED. Multidisciplinary interventions combining medical management, psychosexual therapy, and lifestyle modification have shown potential benefits, yet standardized protocols are lacking [16]. Future studies should evaluate the effectiveness of integrated care pathways in improving erectile function, mental health outcomes, and overall quality of life, ultimately establishing evidence-based guidelines for holistic patient management.

By addressing these research gaps, the field can advance toward a comprehensive understanding of ED as a biopsychosocial condition and enhance clinical strategies to improve both physical and mental health outcomes in affected men.

10. CONCLUSIONS

Erectile dysfunction (ED) is a prevalent condition with significant implications for men's physical and mental health. It negatively affects quality of life, emotional well-being, and interpersonal relationships, and may serve as an early indicator of systemic diseases such as cardiovascular or metabolic disorders.

Clinically, these findings highlight the importance of comprehensive evaluation of men presenting with ED, including assessment of psychological health and potential underlying medical conditions. Early recognition allows timely intervention and can prevent further health deterioration.

We recommend a holistic approach to management, incorporating pharmacological treatment, psychosexual therapy, and lifestyle modifications. Collaboration among primary care physicians, urologists, and mental health professionals is essential to optimize patient outcomes, improve quality of life, and address both the physiological and psychosocial aspects of ED.

11. DISCLOSURE

11.1. Author Contributions

Conceptualization: Jakub Hobot, Michał Iwanicki, Maciej Hobot.

Methodology: Jakub Hobot, Maciej Hobot.

Literature search and selection: Jakub Hobot, Michał Iwanicki, Maciej Hobot.

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Visualization: Jakub Hobot, Michał Iwanicki.

Supervision: Maciej Hobot.

Project administration: Jakub Hobot.

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Not applicable.

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- **Conceptualization:** JH, MI, MH
- **Methodology:** JH, MH
- **Validation (Check):** JH, MI, MH
- **Formal analysis:** JH, MH
- **Investigation:** JH, MI, MH
- **Resources:** JH, MI, MH
- **Data curation:** MI, MH
- **Writing – original draft:** JH, MI, MH
- **Writing – review & editing:** JH, MI, MH
- **Visualization:** JH, MI
- **Supervision:** MH
- **Project administration:** JH
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In preparing this work, the authors used AI-assisted tools for the purposes of language editing, translation into English, and improving readability. After using these tools, the authors reviewed and edited the content as necessary and accept full responsibility for the substantive content of the publication.

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