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Depersonalization–derealization disorder: a contemporary review of definitions, neurobiology, and treatment approaches

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Abstract

Background

Depersonalization/derealization disorder (DPDR) is a rare mental disorder in which patients experience a sense of detachment from themselves or their surroundings. Despite clearly defined diagnostic criteria, this disorder is often unrecognized or confused with other mental illnesses, such as depression or anxiety disorders.

Aim

This article aims to review the current knowledge on the definition, epidemiology, clinical knowledge, neurobiology, and treatment options for DPDR.

Materials and Methods

A narrative review of the literature available in PubMed, Google Scholar, and Web of Science databases was conducted. The analysis covered works published up to December 2025.

Results
DPDR affects approximately 1% of the general population and often co-occurs with other mental disorders. Symptoms may be episodic or chronic and significantly affect patients' quality of life. Cognitive-behavioral therapy remains the best-documented treatment, while the effectiveness of pharmacotherapy and neuromodulation remains unclear due to limited studies.
Conclusions
DPDR is a distinct and clinically significant disorder that warrants greater diagnostic and therapeutic attention. Further research, extensive controlled clinical trials, is needed to develop more effective treatment strategies.

Keywords: depersonalization, derealization, DPDR, dissociative disorders, cognitive behavioral therapy.

Introduction

Depersonalization-derealization disorder (DPDR) is a rare dissociative disorder in psychiatry that has two main aspects. Depersonalization (DP) involves feeling detached from one's own body, emotions, and experiences—people who experience this may feel like they are observing their own lives "from the outside." Derealization (DR), on the other hand, is the feeling that the surrounding world is unreal, distant, as if it were in a movie or a dream. Short-term episodes of DP or DR may occur in healthy individuals, especially in situations of stress or fatigue. Still, in approximately 1-2% of people, DPDR develops chronically, leading to a deterioration in their daily functioning. [1]

To diagnose DPDR, the DSM-5, among other things, is used, which contains three main criteria. First, the patient must experience recurrent, distressing symptoms of depersonalization, derealization, or both. Second, the patient must have insight into the fact that their experiences are not real. The third criterion refers to the necessity of symptoms that undoubtedly negatively affect the patient's life in many aspects, such as independence, social, and professional development. Additionally, to make a diagnosis, these symptoms cannot be explained by any other cause, such as another psychiatric disorder or organic changes in the nervous system. For this purpose, doctors need to perform MRI, EEG, and toxicological tests. [2]

Despite clear diagnostic criteria, DPDR is not frequently diagnosed in clinical practice. Many patients are instead diagnosed with depression, anxiety disorders, or psychotic disorders. For this reason, it is necessary to review the current scientific literature to present the definition, epidemiology, and treatment methods for DPDR as accurately as possible.

Epidemiology and risk factors

The prevalence of DPDR in the general population is approximately 1%. The prevalence of this phenomenon is notably higher among patients diagnosed with other psychiatric conditions. Research has demonstrated that the presence of DPDR is identified in 16.3% of patients diagnosed with schizophrenia, 17% of individuals with borderline personality disorder, and 50% of those struggling with depression. [3]

The onset of symptoms is typically observed among adolescents and young adults (ages 15–25), though no gender disparities have been demonstrated. It has been shown that childhood interpersonal trauma is the most significant predictor of DPDR, surpassing the impact of a single incident of trauma. The most critical factors contributing to the development of DPDR are emotional trauma, followed by physical trauma, and finally, sexual trauma. The perpetrators of these crimes were most often parents, either one or both. [4]
The literature also identifies predictors of DPDR persistence, the most common of which include high levels of anxiety, rumination, and a sense of detachment from one's own emotions. The epidemiology of DPDR is associated with individual susceptibility, stress levels, and the co-occurrence of other psychiatric disorders. [5]

Phenomenology and clinical presentation

Depersonalization refers to a feeling of alienation and a loss of control over one's life. The patient feels that their movements are performed automatically, detached from their body. In addition, there is emotional impoverishment. The patient may often describe feeling as if they are watching themselves from the side as an observer or as if they are part of a movie or computer game. [6]
Derealization, on the other hand, is characterized by a distorted perception of the environment that can be slowed or accelerated. There are disturbances in the perception of colors, sounds, and distances. Patients report feeling as if they were hidden behind a fog. [7]
Several symptoms are observed in the course of DPDR, the most common of which include reduced intensity of sensory stimuli, somatopsychic depersonalization, disturbed proprioception, and disturbances in the perception of visual and auditory stimuli. [8] Another significant symptom is emotional impoverishment, manifested as difficulty in eliciting emotional responses and impaired perception of emotions. Emotions are present in the patient, but they are not perceived correctly. [9]
The course of DPDR can be episodic or chronic. The episodic course lasts from a few minutes to a few hours and occurs in situations of anxiety, fatigue, or sleep deprivation. In the chronic course, symptoms persist for many months or years. The episodic course typically causes less functional impairment than the chronic course. [10]
Despite the absence of psychotic symptoms in the course of DPDR, it is a mental disorder with a gigantic impact on patients' lives. The most common effects of DPDR include withdrawal from social life, reduced work performance, inability to maintain close emotional relationships, and high levels of anxiety. [11]

Assessment tools and diagnostic criteria

The DSM-5 and ICD-11 criteria are used to diagnose DPDR.
In the DSM-5 classification, criterion A states that the patient must experience recurrent and distressing symptoms of depersonalization, derealization, or both. Criterion B states that the patient has a realistic assessment of the situation and no psychotic symptoms. Criterion C states that the symptoms cause the patient distress. Criteria D-E are exclusionary criteria, saying that a somatic illness, medication, substance use, or another mental disorder cannot cause the patient's symptoms. [12]

The ICD-11 classification describes DPDR in a similar way to DSM-5; it refers to the necessity of distressing DP and/or DR symptoms, preserved insight, and the inability to explain the symptoms by other causes. [13]
Another valuable tool for diagnosis and differentiation is the Cambridge Depersonalization Scale (CDS), which assesses the severity and frequency of DPDR symptoms, enabling a retrospective, six-month assessment of the patient's condition. This scale is highly consistent and can be successfully used in clinical patient assessment. [14]
A thorough interview is also essential to the diagnostic process, enabling a qualitative assessment to supplement the CDS. The patient's self-esteem, presence of anxiety, and degree of functioning in society should be assessed. It is also advisable to determine triggering factors, which include stress, but also sleep deprivation, traumatic experiences, and the use of psychoactive substances. [15]
In the differential diagnosis, other psychiatric or neurological disorders and the use of psychoactive substances should be ruled out first. To this end, clinicians use blood and urine tests to rule out substance use disorders, MRI, CT, and EEG. The exclusion of other causes, both organic brain damage and other psychiatric disorders, allows for a diagnosis of DPDR with the help of the CDS scale and the fulfillment of the DSM-5/ICD-11 criteria. [16]

Neurobiology

There have been many attempts to explain the neurobiological causes of DPDR. Sierra and David's model is pivotal. They definitely point to excessive inhibition of the prefrontal cortex over the insula as the cause of DPDR. The insula is a key region of the brain. It processes information about the body's internal state and serves as the emotional center. This model assumes that the ventrolateral prefrontal cortex inhibits the anterior insula, thereby suppressing emotions and inducing a sense of unreality. [17]
Another model that attempts to explain the neurobiological relationships in DPDR is that proposed by Saini and colleagues. According to this model, DPDR is not only the result of increased inhibition but also of downregulation of interoceptive prediction errors, which the authors termed interoceptive silencing. This process leads to a disembodied self, and its repetition consolidates a pattern that clinically manifests as episodes of depersonalization. [18]

Treatment - evidence and recommendations

The treatment of DPDR requires a multifaceted approach, including psychotherapy, pharmacotherapy, and lifestyle changes. Treatment for this disorder is still in its early stages, and many methods have not yet been sufficiently verified in clinical trials.
The primary treatment method is cognitive-behavioral therapy (CBT), which should be used as first-line treatment, given promising preliminary data on its effectiveness. One of the latest studies on this topic found that CBT adapted for DPDR (CBT-f-DDD) is associated with improved clinical outcomes on the CDS scale compared with standard treatment. Still, the sample size limits the generalizability of these results. [19] This area shows potential, but further research is needed.

Pharmacotherapy is also used in patients with DPDR, but the results are mixed. A study of 14 individuals found that naltrexone at a mean dose of 120 mg/d reduced symptoms by 30%. [20] A study on lamotrigine also found inconsistent results. One study showed no advantage of lamotrigine over placebo [21]. Still, retrospective data indicate that lamotrigine combined with SSRIs may improve symptoms in a significant proportion of patients, suggesting that glutamatergic modulation may be beneficial in some cases. [22]
SSRIs have not shown apparent efficacy in the treatment of DPDR, but their use is justified in patients with comorbid depression and/or anxiety disorders. [23]
In the field of neuromodulation, attempts have been made to treat DPDR with repetitive transcranial magnetic stimulation (rTMS), which has been shown to alleviate symptoms in some patients. However, research on this topic is still in its early stages. It has been conducted on a limited group of patients. Nevertheless, they represent a promising method for more accurate evaluation in future, larger clinical trials. [24]
The current state of knowledge on methods for treating or alleviating the symptoms of DPDR is quite limited due to small sample sizes and methodological heterogeneity. Current data suggest that CBT has the most tremendous potential, while pharmacotherapy and neuromodulation show promising results in smaller studies; however, further clinical trials will be necessary before they can be introduced into widespread use

Prognosis and course of the disorder
DPDR can be episodic or chronic. The episodic form involves short-term episodes associated with anxiety or stress, which usually resolve spontaneously. The chronic form, on the other hand, is characterized by symptoms that persist for years, impairing quality of life and daily functioning. [25]
The prognosis for DPDR is strongly associated with accompanying mental disorders and traumatic experiences in the past. Patients with depression or anxiety disorders tend to have a more severe course and a poorer response to treatment. In addition, individuals who experienced neglect or abuse in childhood are more likely to have a chronic rather than episodic course. Furthermore, it has been shown that there are different stages of symptom severity, so the course of DPDR is heterogeneous, which affects the dynamics of the disorder and makes it difficult to predict its course. [26]
There is a lack of large-scale prospective studies in the literature that would allow for a more reliable determination of the disorder's course and the predictive factors for remission or persistence.

Discussion
Current knowledge about depersonalization-derealization disorder (DPDR) indicates that it is a clinically significant disorder, but one that is still poorly understood. The prevalence of DPDR in the general population is 1% and it has been proven that it often co-occurs with depression, anxiety disorders, or PTSD. Symptoms can vary in nature, ranging from short-lived, episodic experiences to chronic and intense states of depersonalization and derealization. Such experiences can seriously impair daily functioning and reduce patients' quality of life.

To date, therapeutic interventions, including both psychotherapy (in particular CBT focused on DP/DR) and pharmacotherapy, have been tested mainly in small pilot studies. Due to their limited scale, it is not possible to formulate clear clinical recommendations on this basis.
In future studies, it will be imperative to conduct larger, controlled trials of psychotherapy and pharmacotherapy, research on biomarkers and neuroimaging, as well as developmental, cultural, and neuromodulatory intervention studies. From a clinical practice perspective, it is also important not to treat DP/DR solely as a secondary symptom of other disorders. This phenomenon requires a separate diagnostic and therapeutic approach, and early diagnosis enables the implementation of measures to prevent symptom chronicity and improve patient functioning.

Conclusions

DPDR is often a chronic, clinically diverse disorder and is strongly associated with comorbid mental disorders and traumatic experiences in the past. Current evidence is limited regarding the effectiveness of therapy. In clinical practice, DPDR should be considered a distinct problem requiring a specific diagnostic and therapeutic approach. The priority for research is to conduct larger, controlled trials of psychotherapeutic and pharmacological interventions, as well as biomarker studies, to better understand the mechanisms, course, and prognosis of this disorder.

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Author's contribution:

Conceptualization: MC, JM, PG
Methodology: MC, JM, PG
Formal analysis: MC, JM, PG
Investigation: MC, JM, PG
Writing - rough preparation: MC, JM, PG
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