Chapter 10
Exercise and Psychotherapy in the Treatment of Bipolar Disorder

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ABSTRACT

Bipolar disorder is a mental disorder that has a very wide prevalence in the population. Currently, the mainstream therapy for bipolar disorder is medication. However, significant side effects have been found. Several non-pharmacological therapies have gained widespread attention in recent years, including psychotherapy and exercise intervention. This chapter reviews the current knowledge on the mechanisms, and efficacy of psychotherapy and exercise interventions affecting bipolar disorder. It also provides an outlook on the limitations and future development of psychotherapy and exercise intervention. The review concludes that although there have been a considerable number of studies discussing both therapies in the management of bipolar disorder. However, most of the studies suffer from low sample sizes and insufficient levels of evidence. The research and application of psychotherapy and exercise interventions in the bipolar disorder population are still in their early stages.

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INTRODUCTION

Bipolar disorder (BD) is a mental disorder characterized by extreme mood swings that fluctuate between episodes of mania and depression. It is a collection of cerebral conditions that trigger significant oscillations in an individual's emotional state, vitality, and overall performance. It can be categorized into various types, including Bipolar disorder I (BD-I), Bipolar disorder II (BD-II), Cyclothymic disorder, Other specified bipolar and related disorders, and Unspecified bipolar and related disorders (American Psychiatric Association, 2022). Exercise intervention (EI) and psychotherapy are two non-pharmacological therapies for BD and have become more and more popular. Considering that there is a lack of comprehensive reviews in this field, this chapter is going to give a review of the current knowledge on mechanisms, efficacy, development, and limitations faced by psychotherapy and EI affecting BD.

Diagnosis of Bipolar Disorder

In recent years, research efforts have intensified to find objective indicators for diagnosing BD. These endeavors encompass neuroimaging, peripheral measurements, and genetic studies. Neuroimaging has unveiled that individuals with BD display dysfunctions in neural circuits associated with emotional processing and regulation. Additionally, studies have identified an "overactive" reward processing circuit in certain brain regions. Structural changes accompanying these dysfunctions include reductions in gray matter volume and alterations in white matter tracts (Phillips & Swartz, 2014).

Peripheral measurements target biomarkers, with findings indicating that individuals with BD consistently show decreased levels of brain-derived neurotrophic factor (BDNF), increased pro-inflammatory cytokines, and impaired mitochondrial function (Hu et al., 2023). Genetic research, on the other hand, has been probing into specific genes associated with increased susceptibility to BD (Frey et al., 2013). However, these biomarkers have not achieved adequate internal validation, and their associations with BD lack specificity(Abi-Dargham et al., 2023). Therefore, no single biomarker has been established as a reliable diagnostic tool for BD (Sigitova et al., 2017). The diagnostic systems based on symptoms and clinical presentations, such as the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), remain the primary methods for diagnosing BD.

According to DSM-5, Bipolar Disorder Type I (BD-I) is diagnosed when individuals experience episodes of severe depression and mania. The diagnosis requires depressive episodes lasting at least two weeks and manic episodes lasting at least one week, sometimes necessitating hospitalization. Bipolar Disorder Type II (BD-II) involves hypomanic episodes and major depressive episodes. Depressive episodes in BD-II must last at least two weeks, followed by hypomanic episodes, which are less severe than manic episodes and do not significantly impair social or occupational functioning. Hospitalization is generally not required for BD-II (American Psychiatric Association, 2022).

BD frequently co-occurs with other psychiatric disorders such as attention-deficit hyperactivity disorder (ADHD), disruptive behavior disorders, anxiety disorders, and substance use disorder (Joshi & Wilens, 2009; Sesso et al., 2023). Studies have shown that about 50-60% of individuals with BD experience comorbidity either currently or over their lifetime (Messer et al., 2017). The overlapping symptoms between BD and its comorbidities complicate the diagnosis, leading to frequent misdiagnosis. One study highlighted that 69% of individuals with BD reported a history of misdiagnosis, which significantly delays appropriate treatment (Hirschfeld et al., 2003).