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Prognostic Trajectories in Adolescent Bipolar Disorder During Remission: Interactions among Metacognition, Goal Orientation, and Social Support

Zirui An[1, *]

[1] Chongqing Humanities and Art School, Chongqing, 400000, China
*Corresponding author: fan23989@outlook.com

Abstract:

Background: Adolescent bipolar disorder (BD) is widely recognized as a severe psychiatric condition with a markedly elevated risk of relapse. Although a subset of patients attain symptom control during remission under clinical care, long-term prognostic trajectories still display substantial heterogeneity. Methods: To clarify determinants relevant to remission, this review systematically retrieved and compared literature via keyword-based searches across major databases, including Google Scholar and CNKI, spanning 2000–2025; classic theoretical works were also consulted to strengthen the conceptual foundation and to offer a more integrated perspective. Results: Evidence suggests that metacognition, goal orientation, and social support do not operate in isolation. Rather, they form a dynamic, mutually reinforcing cycle that exerts a marked influence on functional recovery among adolescents with BD during remission. Conclusion and Significance: The three factors emerge as core elements shaping remission outcomes and informing intervention design. They provide a robust theoretical basis together with practical implications for facilitating stable remission and for fostering more favorable long-term trajectories in adolescents with BD.

Keywords: Bipolar Disorder, adolescent, metacognition, goal orientation, social support

1. Introduction

Adolescent BD is generally defined as a severe psychiatric condition characterized by cyclical episodes of depression and mania, typically occurring among individuals aged 15 to 18 years. The present review concentrates on the predictive role of three interrelated dimensions—metacognition, goal orientation, and social support (hereafter, the "core elements")—in determining both functional recovery and relapse risk

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during remission in adolescents with BD. Prior research indicates that, beyond the direct functional impairment produced by pathological symptoms, psychosocial factors—levels of social support, exposure to adverse life events, perceived self-efficacy—also play decisive roles in the recurrence of BD episodes. On this basis, fluctuations in the core elements have been conceptualized as potential targets for psychosocial intervention strategies. Accordingly, a predictive framework has been formulated to address non-pharmacological influences that threaten remission stability following clinical treatment; the intent is to provide a theoretical foundation and a practical pathway for improving long-term recovery outcomes among adolescents with BD.

2. Theoretical Review of Relapse Factors and Predictors

The relapse factors presented below are illustrative examples synthesized from existing literature reviews. In reality, the determinants of relapse in adolescent BD are multifaceted and highly complex. The cases discussed here are included solely to provide a conceptual foundation for the subsequent analysis of the "core elements" in this article.

2.1 Abnormal Reward Stimuli

Within Robin Nusslock's "Reward Oversensitivity Model," the elevated risk of bipolar disorder is attributed primarily to excessive exposure to reward-related stimuli in life events, which disrupts approach motivation and impairs goal-directed functioning. When individuals with BD encounter setbacks or the withdrawal of anticipated rewards, their approach motivation may decline disproportionately, thereby contributing to depressive symptoms. The vulnerability reflects susceptibility within neural reward circuitry together with maladaptive response patterns in behavior—both recognized as critical mechanisms shaping the clinical onset and long-term course of BD [1]. In this context, excessive reward stimulation during remission has been identified as a destabilizing factor for approach motivation and goal-oriented behavior, a central psychological pathway through which relapse can emerge in adolescents with BD.

2.2 Social and Psychological Factors

Song Wen et al. conducted a one-year longitudinal study involving 112 adolescents diagnosed with BD—54 males and 58 females aged 12–18, illness duration 1–4 years [2]. The recurrence of manic and depressive episodes was strongly correlated with several variables, including social support level, scores on negative life events, childhood trauma histories, personality trait dimensions, and sleep disturbances. Multivariate analysis further identified social support, sleep disturbance, adverse life events, childhood trauma, introversion–extraversion, and neuroticism as significant predictors of relapse. Overall, the findings highlight a high relapse rate in adolescent BD and emphasize the close association between psychosocial factors—particularly negative life events and early traumatic experiences—and the recurrence of the disorder.

2.3 The Relationship between Parental Rearing Styles and Family Environment

Zhang Lili et al. conducted a controlled study with 50 adolescents with BD and 50 healthy peers, comparing scores on the Family Environment Scale (FES-CV) and the Egna Minnen Beträffande Uppfostran (EMBU) Scale [3]. Adolescents with BD showed lower levels of family intimacy, communication, emotional expression, and personal independence relative to controls. Insufficient family support appeared to compromise adolescents' sense of security, contributing to heightened sensitivity and anxiety. Moreover, negative parenting styles—overprotection, punitive behaviors, rejecting behaviors—were associated with increased dependency and psychological vulnerability, thereby diminishing self-esteem and independent coping capacity. Taken together, such patterns of negative family support can directly weaken emotional regulation in adolescents with BD and indirectly erode perceived social support and purpose, potentially constituting a psychological foundation for relapse.

2.4 Stigma and Quality of Life

An empirical investigation by Lu Qingchun et al. involving 101 patients with BD showed that stigma is common and is closely accompanied by reduced self-efficacy, diminished social support, and impaired quality of life [4]. Longer illness duration was associated with more severe stigma, lower levels of self-efficacy and social support, and greater impairment in quality of life, often resulting in social withdrawal and difficulties in obtaining external validation. These psychosocial processes represent critical mechanisms contributing to poor prognosis and elevated relapse risk in BD. In sum, stigma undermines quality of life directly and, through reductions in self-efficacy and social support, indirectly as well—both routes functioning as negative determinants of recovery in patients, including adolescents.

Although the determinants of relapse are inherently complex and multifaceted, they can be systematically examined across three primary dimensions: the cognitive domain, represented by metacognition; the motivation-

al domain, captured by goal orientation; and the social domain, reflected in social support. The present analysis integrates theoretical perspectives from these fields in an interactive fashion, with particular emphasis on practical implications for cognitive–behavioral functioning.

3. Predictors: an Overview of the Core Elements

3.1 Metacognition

Metacognition refers to the capacity to recognize, comprehend, monitor, and regulate one's own cognitive processes as well as those of others. Empirical evidence indicates that metacognitive training (MCT) shows considerable promise in the treatment of BD and related disorders. Haffner et al. reported that MCT appears particularly effective for individuals with pronounced functional impairment, noting advantages such as relative simplicity, interactivity, and non-stigmatizing delivery—features that allow use as a primary entry point or as an adjunct to individualized psychotherapy [5]. Batmaz et al. (2021) further emphasized that intervention models grounded in metacognitive theory help clarify core psychological mechanisms underlying BD [6]. For patients unresponsive to pharmacological or conventional psychotherapeutic approaches, MCT and cognitive-behavioral therapy may serve as important complementary strategies; even so, their efficacy warrants confirmation through large-scale investigations with rigorous designs.

Overall, metacognition represents a central psychological mechanism for conceptualizing and addressing relapse risk in adolescents with BD and carries broad implications for future theoretical development and clinical practice. Within the present framework, metacognition is positioned as a cognitive-level construct that establishes a critical foundation for subsequent predictive modeling.

3.2 Goal Orientation

Goal orientation was initially conceptualized as an individual's approach to action within achievement tasks [7]. Subsequent work on achievement motivation produced multiple models, most converging on two fundamental forms [8]. Ames identified these as mastery goals and performance goals. A mastery orientation emphasizes self-improvement, competence development, and knowledge acquisition, encouraging deep learning strategies, proactive goal setting, and ongoing monitoring and adjustment of learning behaviors. By contrast, a performance orientation centers on comparative ability display in relation to others and is often subdivided into performance-approach goals (surpassing peers, demonstrating superiority) and performance-avoidance goals (avoiding failure, evading negative evaluation). Empirical findings indicate that differing goal orientations can shape motivational processes, emotional experiences, self-regulatory capacity, and academic achievement.

Overall, goal orientation offers a critical basis for understanding adolescents' motivational mechanisms in learning and in adaptation to stress, with implications for educational intervention and mental health promotion [8,9]. Within adolescents with BD, a mastery-oriented pattern may foster positive, goal-directed engagement, supporting stable recovery trajectories and adaptive functioning. In the present framework, goal orientation is treated as a motivational construct that supplies a driving force for predictive model development.

3.3 Social Support

Social support is recognized in health and social psychology as a central construct and a vital psychosocial resource influencing mental health and recovery outcomes. Taylor emphasized that social support entails both the subjective perception of care, affection, respect, and recognition from others and the objective reality of reciprocal assistance and shared responsibility within one's social network [10]. Complementing this view, Cohen and Wills proposed the "buffering hypothesis," which highlights the protective function of social support during periods of heightened stress by mitigating the adverse impact of stressors on psychological and physical well-being [11]. The mechanism is particularly salient for adolescents with BD because remission is frequently accompanied by elevated stress and vulnerability to relapse. Adequate social support can buffer stress, strengthen self-efficacy, and reduce the likelihood of comorbid depression and anxiety, with effects transmitted via neuroendocrine, immune, and behavioral pathways. Collectively, these processes contribute to functional recovery and improvement in overall quality of life [10].

In summary, social support—conceived as a multidimensional, dynamic resource—may operate as a protective factor or, when insufficient or negative, as a source of risk during remission in adolescents with BD. In the present model, it functions not only as a predictor but also as a potential mediator or moderator shaping interactions between cognitive and motivational processes. Unlike metacognition and goal orientation, social support is largely contingent on external environments; its beneficial and detrimental effects often extend beyond direct individual control.

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4. Discussions

The present review examined common relapse factors in adolescents with BD during remission, emphasizing the roles of metacognition, goal orientation, and social support in facilitating functional recovery throughout the remission period.

The findings indicate that:

Metacognition plays a pivotal role in the cognitive dimension of functional recovery. Enhanced metacognitive capacity enables adolescents with BD to effectively recognize, monitor, and regulate emotional states, physical conditions, and symptomatic experiences. This improvement can enhance tolerance for transient loss of control during remission, contribute to greater stability in functional recovery, and may, to some extent, shorten the duration of remission.

With respect to goal orientation, adoption of a mastery-oriented approach facilitates focused, proactive, and sustained engagement in recovery activities. In contrast, a performance orientation may heighten vulnerability among adolescents with BD who exhibit limited self-awareness; exposure to adverse real-world events can exacerbate frustration and negative affect, leading to inaccurate self-appraisals of competence and to avoidance tendencies that undermine recovery.

Social support demonstrates a bidirectional quality characterized by external dependence, largely due to the uncertainty inherent in social environments, which limits individuals' ability to determine the level and nature of support received. Positive support contributes to recovery by strengthening motivation, enhancing confidence, and reinforcing self-efficacy. Conversely, inadequate or negative support undermines these capacities, creates additional challenges, and can foster confusion that hinders progress. Moreover, social support may act as a mediating or moderating variable in the relationships linking metacognition and goal orientation to functional recovery, thereby exerting an indirect yet influential role in remission.

Enhancement of functional status contributes not only to stabilization and improvement across emotional, cognitive, and motivational domains but also to the acquisition and maintenance of social support. In turn, confidence in recovery and self-efficacy are reinforced; together, these linked processes can delay relapse and enhance both the stability and the quality of remission.

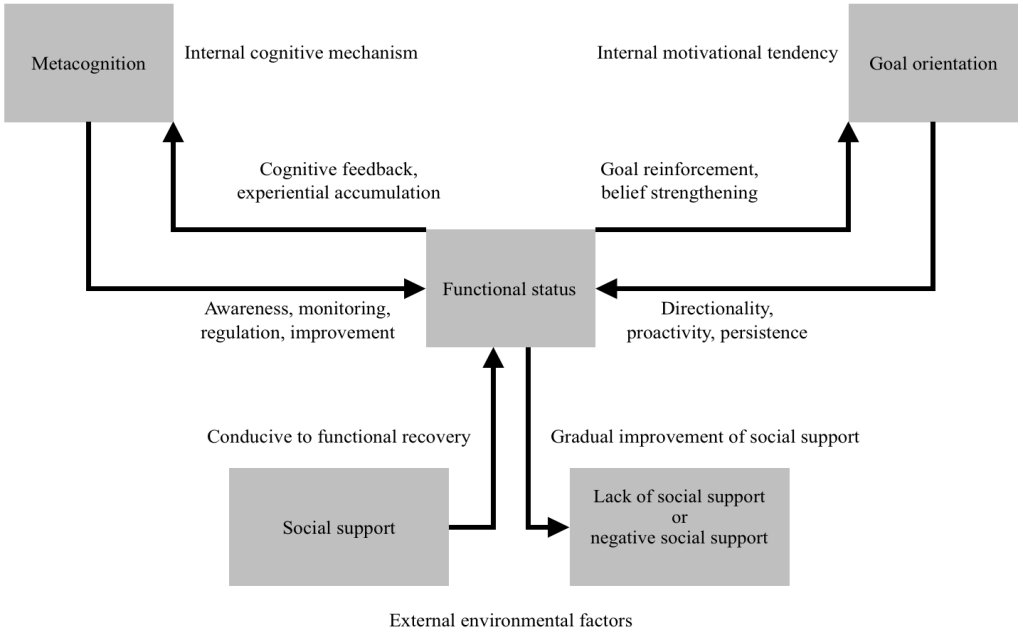

Fig. 1 Conceptual Model of Core Elements of Remission in Adolescent BD

As illustrated in Figure 1, the proposed framework introduces an interactive predictive model at cognitive, motivational, and contextual levels, underscoring reciprocal interplay among metacognition, goal orientation, and social support. These elements jointly facilitate functional recovery, while improvements in functional status feed back to reinforce the three core dimensions, generating a dynamic loop. The model elucidates multidimensional

mechanisms underlying recovery and provides a structured way to conceptualize pathways for reducing relapse risk and for enhancing tolerance during remission.

5. Conclusion

Although the present study advances an interactive framework encompassing metacognition, goal orientation, and social support, several limitations should be noted. The analysis remains primarily theoretical and has not yet undergone rigorous empirical validation; conclusions therefore merit cautious interpretation. In addition, the review of the three core elements is constrained in depth and does not fully elucidate underlying mechanisms, while interactive effects among them require further systematic study. The analysis of relapse risk factors is limited in scope and lacks standardized empirical measurement, yielding a relatively weak evidentiary base. Future research is expected to strengthen and expand the framework through larger and more representative samples, longitudinal designs, and advanced methodologies—e.g., structural equation modeling—thereby enhancing both theoretical robustness and applicability.

The framework proposed here remains largely exploratory; its theoretical depth and systematization call for refinement. Subsequent work may benefit from integrating additional cognitive-behavioral theories to enrich the conceptual foundation and to improve scientific rigor and theoretical robustness.

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