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Predicting Suicidal Behaviors in Patients With Bipolar Disorder Based on Stressful Life Events, Emotion Regulation, and Coping Strategies

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A B S T R A C T

Bipolar disorder is one of the most important psychiatric disorders and is associated with a high prevalence of suicide. Irregular social rhythms may play an important role in the development of suicidal thoughts and behaviors among these patients. Therefore, the present study aimed to investigate the role of social rhythm in predicting suicidal behaviors among patients with bipolar disorder and the mediating roles of emotion regulation and coping strategies. This study employed a descriptive-correlational design using regression analysis. The statistical population consisted of patients with bipolar disorder in Tehran during 2025–2026. A total of 193 patients were selected through convenience sampling from Iran Psychiatric Hospital and Rasoul Akram Hospital. The participants completed the Stressful Life Events Questionnaire (1985), Emotion Regulation Questionnaire (Gross, 2003), Ways of Coping Questionnaire (1984), and Suicidal Behaviors Questionnaire (2002). The data were analyzed using regression analysis in SPSS version 25. The results indicated that stressful life events (β = −0.23, p = .001), cognitive reappraisal (β = −0.13, p = .036), suppression (β = −0.23, p = .001), escape–avoidance (β = 0.21, p = .001), and planful problem-solving strategies (β = −0.13, p = .040) significantly predicted suicidal behaviors among patients with bipolar disorder. Based on the findings, it is recommended that clinicians pay particular attention to reducing stressful factors and improving emotion regulation and coping strategies in treatment programs designed to prevent and ameliorate suicidal behaviors among patients with bipolar disorder.

Keywords: *suicide, stressful life events, emotion regulation, patients with bipolar disorder*

1. Introduction

Bipolar disorder is a severe, recurrent, and frequently disabling psychiatric condition characterized by alternating episodes of mania, hypomania, and depression, accompanied by substantial disturbances in mood, cognition, behavior, interpersonal functioning, and occupational performance. Although advances in pharmacological and psychosocial interventions have improved the management of bipolar disorder, suicide

remains one of the most serious and persistent clinical consequences of the disorder. Individuals with bipolar disorder experience suicidal ideation, suicide attempts, and death by suicide at markedly elevated rates compared with the general population, making suicidality a central concern in the assessment, treatment, and long-term monitoring of these patients. The risk is particularly pronounced during depressive and mixed episodes, periods of rapid mood fluctuation, transitions between affective states, and phases marked by hopelessness, agitation, impulsivity, or severe psychosocial stress. Consequently, understanding the psychological and environmental mechanisms that contribute to suicidal behavior in bipolar disorder is essential for developing effective prevention and intervention strategies (Malhi et al., 2013; Miller & Black, 2020; Sher & Oquendo, 2023).

Suicidal behavior is a multidimensional phenomenon encompassing suicidal thoughts, plans, preparatory behaviors, attempts, and completed suicide. These manifestations do not necessarily occur along a simple linear continuum; rather, they may emerge through complex interactions among psychiatric symptoms, personality characteristics, cognitive vulnerabilities, environmental stressors, interpersonal difficulties, and deficits in adaptive self-regulation. From a clinical perspective, suicidal behavior cannot be adequately explained by the presence of a psychiatric diagnosis alone. Although bipolar disorder substantially increases vulnerability, only a proportion of patients develop persistent suicidal ideation or engage in suicide attempts. This variability suggests that additional factors determine whether underlying vulnerability is translated into suicidal behavior. Contemporary clinical perspectives therefore emphasize the need to identify proximal and modifiable predictors, including stressful life events, emotion-regulation difficulties, and maladaptive coping strategies, that may intensify suicide risk among individuals already affected by a severe mood disorder (Miller & Black, 2020; Sher & Oquendo, 2023).

The interpersonal theory of suicide provides one influential framework for understanding the transition from psychological distress to suicidal behavior. According to this perspective, suicidal desire may emerge when individuals simultaneously experience thwarted belongingness and perceived burdensomeness, whereas the enactment of potentially lethal self-harm additionally requires an acquired capability for suicide. Repeated exposure to painful experiences, fear-inducing circumstances, self-injury, trauma, or previous suicide attempts may reduce fear of death and increase tolerance for physical pain. Although the theory has been examined extensively in specific populations, including military groups, its central propositions are also relevant to patients with bipolar disorder, who may experience social isolation, interpersonal conflict, stigma, functional impairment, and beliefs that they are burdensome to family members or society. These experiences may become particularly salient during depressive or mixed episodes, when negative self-appraisals and hopelessness are intensified (Stewart, 2022).

The clinical course of bipolar disorder itself creates a context in which suicide risk may fluctuate considerably over time. Patients frequently encounter disruptions in sleep, activity patterns, social routines, and interpersonal relationships, all of which can destabilize mood and impair psychological functioning. Irregular daily rhythms may contribute to affective instability and increase sensitivity to stress, whereas structured routines and interpersonal stabilization may support recovery and relapse prevention. Interpersonal and Social Rhythm Therapy has therefore been developed to help patients recognize the relationship between social rhythm disruption, interpersonal stress, and mood episodes. Evidence regarding group-based Interpersonal and Social Rhythm Therapy suggests that improving social rhythm regularity and interpersonal functioning may provide benefits when used as an adjunctive treatment for bipolar disorder. Such findings are important because disruption of social and interpersonal rhythms may not only exacerbate mood symptoms but may also increase exposure to stressful experiences, weaken coping resources, and reduce the capacity to regulate intense emotional states (Mazaheri et al., 2026).

Among the environmental and psychosocial variables associated with suicidality, stressful life events have received substantial empirical attention. Stressful life events may include interpersonal loss, relationship breakdown, bereavement, financial hardship, occupational or academic difficulties, family conflict, physical illness, legal problems, trauma, and major changes in living conditions. These events can challenge an individual's adaptive resources and may precipitate emotional crises, particularly when they are perceived as uncontrollable, threatening, humiliating, or irreversible. A systematic review of the literature has shown that negative life events are consistently associated with suicidal ideation and suicidal behavior across different populations, although the magnitude and nature of these associations vary according to the type, timing, severity, and accumulation of stressors. Events involving interpersonal

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loss, rejection, conflict, or humiliation appear especially relevant to acute suicidal crises (Liu & Miller, 2014).

The effects of stressful life events may be especially pronounced in patients with bipolar disorder because of their heightened biological and psychological sensitivity to stress. Within stress-vulnerability models, bipolar disorder is understood as involving an underlying vulnerability that interacts with environmental demands. Stressful events may contribute to the onset or recurrence of mood episodes, disrupt sleep and daily routines, intensify affective symptoms, and undermine treatment adherence. During depressive episodes, stressful events may reinforce hopelessness, negative self-evaluation, and perceived burdensomeness, whereas during mixed or agitated states, distress may combine with increased energy and impulsivity, creating a particularly dangerous context for suicidal action. Accordingly, the relationship between life stress and suicidal behavior in bipolar disorder may be both direct and indirect, operating through worsening symptoms, interpersonal disruption, impaired emotion regulation, and ineffective coping responses (Fletcher et al., 2014; Malhi et al., 2013).

The cumulative burden of stressful life events is also important. A single event may be manageable when adequate psychological, interpersonal, and material resources are available, whereas repeated or clustered stressors may overwhelm an individual's coping capacity. Patients with bipolar disorder may experience multiple secondary stressors resulting from the disorder itself, including hospitalization, employment instability, relationship deterioration, financial problems, stigma, and reduced social participation. These consequences can create a recursive cycle in which mood symptoms generate stressful circumstances, and stressful circumstances subsequently intensify mood instability and suicidal risk. Therefore, the assessment of suicide risk in bipolar disorder should consider not only the presence of current life events but also their perceived severity, duration, accumulation, and interaction with the patient's coping resources.

Emotion regulation represents another central mechanism through which psychological distress may be transformed into suicidal ideation or behavior. Emotion regulation refers to the processes through which individuals influence which emotions they experience, when those emotions occur, and how they are expressed or managed. Adaptive emotion regulation allows individuals to identify, tolerate, modify, and appropriately express emotional experiences, whereas emotion dysregulation may involve emotional unawareness, nonacceptance of emotions, difficulty controlling impulses under distress, limited access to effective regulation strategies, or excessive reliance on maladaptive strategies. Patients who cannot effectively regulate intense sadness, shame, anger, anxiety, agitation, or hopelessness may perceive suicide as a means of escaping intolerable emotional pain (Neacsiu et al., 2018).

A systematic review examining the relationship between emotion regulation and suicidal ideation and attempts has demonstrated that emotion-regulation difficulties are consistently associated with increased suicidality in both adolescents and adults. Maladaptive strategies, including suppression, rumination, avoidance, and emotional disengagement, may prolong or intensify distress, whereas more adaptive strategies, such as cognitive reappraisal, acceptance, and problem solving, may reduce the impact of negative emotions. Nevertheless, the relationship between specific emotion-regulation strategies and suicide risk is complex. A strategy may be adaptive in one context but ineffective in another, depending on emotional intensity, situational demands, cognitive flexibility, and the individual's ability to implement the strategy effectively (Colmenero-Navarrete et al., 2022).

Cognitive reappraisal and expressive suppression are among the most widely studied emotion-regulation strategies. Cognitive reappraisal involves changing the interpretation of an emotional situation in a way that alters its emotional impact. It is generally considered an adaptive antecedent-focused strategy because it can reduce negative affect before emotional responses become fully activated. In contrast, expressive suppression involves inhibiting the outward expression of an already activated emotional response. Although suppression may be useful in certain social situations, habitual suppression can increase physiological arousal, reduce emotional communication, impair interpersonal closeness, and limit access to social support. The Emotion Regulation Questionnaire provides a widely used assessment of these two strategies, and the Persian version has demonstrated acceptable psychometric properties, supporting its use in Iranian populations (Foroughi et al., 2021).

Emotion regulation may be particularly relevant to suicidality in bipolar disorder because the disorder is defined by pronounced disturbances in mood intensity, duration, and variability. During depressive episodes, patients may struggle to regulate sadness, guilt, hopelessness, and self-criticism. During manic or hypomanic episodes, they may have difficulty regulating excitement, irritability, anger, and

impulsive urges. Mixed episodes may involve the simultaneous presence of depressive cognition and heightened activation, producing severe emotional turmoil. In such conditions, ineffective emotion-regulation strategies may increase the likelihood that distress becomes overwhelming and that suicidal thoughts are perceived as a viable method of emotional escape. Problems with emotion regulation may also impair the ability to delay action, consider long-term consequences, seek support, or apply alternative coping methods during acute crises (Colmenero-Navarrete et al., 2022; Neacsiu et al., 2018).

Closely related to emotion regulation are coping strategies, which refer to the cognitive and behavioral efforts used to manage internal or external demands perceived as stressful or exceeding available resources. Coping may be broadly classified as problem-focused, emotion-focused, approach-oriented, or avoidance-oriented. Problem-focused coping involves efforts to modify the stressful situation through planning, information seeking, decision making, or direct action. Emotion-focused coping aims to manage the emotional consequences of stress and may include acceptance, positive reinterpretation, emotional expression, or seeking support. Avoidance-oriented strategies, such as denial, withdrawal, disengagement, and escape, may temporarily reduce distress but often prevent effective resolution of the underlying problem. The consequences of coping therefore depend on the flexibility, timing, and contextual appropriateness of the selected strategy.

Studies of individuals who have attempted suicide indicate that maladaptive coping patterns are common in suicidal populations. Individuals with a history of suicide attempts may rely more heavily on avoidance, emotional disengagement, withdrawal, or passive responses and may use problem solving or support-seeking strategies less effectively. Such coping patterns can increase feelings of entrapment because the source of distress remains unresolved while emotional suffering accumulates. Research conducted among individuals who had attempted suicide has highlighted the relevance of coping strategies to suicidal behavior and has suggested that strengthening adaptive coping skills may be an important component of suicide-prevention interventions (Bazrafshan et al., 2014).

Prospective evidence from psychiatric emergency patients similarly indicates that coping styles are associated with subsequent depression and suicide risk. Avoidant coping may predict persistent or worsening psychological symptoms, whereas more active coping strategies may be associated with better adaptation. However, coping should not be viewed as a fixed trait; it is a dynamic process influenced by symptom severity, cognitive resources, social support, previous experiences, and the perceived controllability of the stressor. During an acute psychiatric crisis, patients may have difficulty accessing coping strategies they would ordinarily use, making assessment of both habitual coping and crisis-specific responses clinically important (Horwitz et al., 2018).

The association between coping and suicide has also been demonstrated in nonclinical populations. Among university students, depression, anxiety, stress, hopelessness, subjective well-being, and coping styles were significantly related to suicidal outcomes. These findings indicate that coping strategies may either buffer or amplify the effects of emotional distress and hopelessness. When individuals use active problem solving, seek social support, and reinterpret stressful situations constructively, the impact of stress may be reduced. Conversely, when they respond through avoidance, withdrawal, or self-blame, stress may become more persistent and psychologically damaging (Lew et al., 2019).

Recent network-based research has further demonstrated that coping styles are closely connected to suicidal ideation and broader existential variables, including meaning in life. Such findings suggest that coping strategies are not isolated behaviors but occupy an important position within a system of psychological processes associated with suicide risk. Adaptive coping may preserve meaning, agency, and psychological connection during adversity, whereas maladaptive coping may reinforce helplessness, disconnection, and suicidal thinking. Identifying specific coping strategies that are most directly linked to suicidal ideation may therefore provide clinically useful intervention targets (He et al., 2025).

Coping strategies have particular importance in bipolar disorder because patients must manage both ordinary life stressors and the recurring demands of a chronic mood disorder. These demands include recognizing early warning signs, maintaining medication adherence, regulating sleep and activity, managing interpersonal conflict, coping with stigma, and recovering from the consequences of previous episodes. Psychological factors, including cognitive style and coping style, have prospective relationships with symptom expression in bipolar disorder, indicating that coping may influence both the course of the disorder and its associated risks (Fletcher et al., 2014). Moreover, research specifically examining bipolar disorder has shown that coping strategies are associated with suicide attempts and

suicidal ideation. Maladaptive strategies may increase vulnerability, whereas problem-focused and support-oriented strategies may have protective functions (Poyraz et al., 2021).

Stressful life events, emotion regulation, and coping strategies are likely to operate interactively rather than independently. Stressful events activate emotional responses, emotion-regulation processes shape the intensity and duration of these responses, and coping strategies determine how individuals respond behaviorally and cognitively to the demands they face. A patient who experiences a severe interpersonal loss may use cognitive reappraisal, seek social support, and engage in problem solving, thereby reducing the emotional impact of the event. Another patient may suppress emotional expression, withdraw from others, and rely on escape–avoidance, increasing isolation, hopelessness, and suicidal ideation. Thus, similar life events may produce different outcomes depending on how emotions are regulated and how the stressor is managed.

The accurate assessment of suicidal behavior is essential for examining these relationships. The Suicidal Behaviors Questionnaire–Revised is a brief measure designed to assess lifetime suicidal ideation and attempts, recent suicidal ideation, communication of suicidal intent, and the perceived likelihood of future suicidal behavior. Its validation in Iran has provided evidence of acceptable reliability and validity, supporting its use for identifying suicide risk within Iranian clinical and research settings (Amini-Tehrani et al., 2020). The availability of culturally validated measures is particularly important because the expression, disclosure, and interpretation of suicidal thoughts may be influenced by cultural, religious, interpersonal, and social factors.

Despite extensive evidence linking bipolar disorder with suicide, important gaps remain regarding the combined predictive contribution of stressful life events, emotion-regulation strategies, and coping styles. Many studies have examined these variables separately, and a substantial proportion of existing research has focused on general psychiatric or nonclinical populations. Fewer studies have simultaneously assessed these factors among patients with bipolar disorder, particularly within the Iranian sociocultural context. Examining their relative contributions may clarify which variables have the strongest associations with suicidal behavior after accounting for the effects of the others. Such evidence could improve suicide-risk assessment and support the development of interventions targeting modifiable psychological processes rather than relying solely on diagnostic or demographic indicators.

Accordingly, the present study aimed to predict suicidal behaviors in patients with bipolar disorder based on stressful life events, emotion-regulation strategies, and coping strategies.

2. Methods and Materials

2.1. Study Design and Participants

The present study employed a correlational design using regression analysis. The statistical population consisted of all patients with bipolar disorder in Tehran during 2025–2026. After obtaining the necessary authorization and ethical approval, 200 participants were selected through convenience sampling according to the study inclusion criteria. Following announcements through social media and in-person recruitment at Iran Psychiatric Hospital and Rasoul Akram Hospital, 200 patients completed the questionnaires. Seven participants were excluded because they had completed the questionnaires incompletely. The inclusion criteria were having at least basic literacy sufficient to understand the questionnaire items, providing informed consent to participate in the study, having a history of bipolar disorder confirmed by a psychiatrist and documented in the patient's medical record, not having an acute physical illness such as cancer, multiple sclerosis, or diabetes, and having no history of substance abuse. The exclusion criteria were having an acute medical disorder or serious physical illness and submitting incomplete questionnaires. After the researchers visited the hospitals and provided the patients with an initial explanation of the study objectives, the participants completed the informed consent form. To maintain confidentiality, the data were collected without recording the participants' names or identifying information, thereby protecting their identities.

2.2. Measures

The Emotion Regulation Questionnaire was developed by Gross and John in 2003 to assess emotion-regulation processes and strategies. The questionnaire consists of 10 items and includes two subscales: cognitive reappraisal, comprising six items, and expressive suppression, comprising four items. Respondents answer the items on a seven-point Likert scale ranging from 1, indicating strongly disagree, to 7, indicating strongly agree. Cronbach's alpha coefficients of .79 for cognitive reappraisal and .73 for

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expressive suppression have been reported. The three-month test–retest reliability coefficient for the total scale was reported to be .69 (Gross, 2008). The scale has also been standardized for use in the Iranian cultural context. The internal consistency coefficients of the questionnaire ranged from .60 to .81, and its convergent validity coefficient was reported to be .36 (Foroughi et al., 2021).

The Suicidal Behaviors Questionnaire–Revised consists of four items assessing suicidal behaviors in the past, present, and future. A higher total score indicates a greater likelihood of attempting suicide. The cutoff score for clinical populations is 8. In the original version of the questionnaire, a Cronbach's alpha coefficient of .80 was reported for adult psychiatric patients. Its convergent validity coefficient was also reported to be .42 (Osman et al., 2001). The psychometric properties of this questionnaire have also been examined and confirmed in Iran. A Cronbach's alpha coefficient of .80 and a convergent validity coefficient of .37 have been reported for the Persian version of the questionnaire (Amini-Tehrani et al., 2020).

The Life Stress Scale was developed by Paykel in 1998 and consists of 65 major life events. It is used to assess the number of stressful events and the degree and intensity of stress experienced in individuals' lives. Respondents are asked to indicate the degree of stress they have experienced in relation to stressful life events using a five-point Likert scale. The questionnaire comprises five dimensions: psychosocial stressors, individual–family stressors, occupational–educational stressors, bereavement and hopelessness stressors, and psychosomatic stressors. For events occurring during the previous two years, a "yes" response is scored 1, whereas a "no" response is scored 0. The questionnaire provides a total score, with higher scores indicating the perception of more severe stressful life events. The reliability and convergent validity coefficients of the questionnaire have been reported to be .81 and .42, respectively (Turner & Wheaton, 1995). An examination of the psychometric properties of the questionnaire in Iran produced a reliability coefficient of .79 and a convergent validity coefficient of .37 (Roohafza et al., 2011).

The Ways of Coping Questionnaire was developed by Lazarus and Folkman in 1984. It consists of 66 items scored on a four-point Likert scale ranging from 1, indicating never, to 4, indicating always. The questionnaire includes eight dimensions: confrontive coping, distancing, accepting responsibility, seeking social support, escape–avoidance, self-control, planful problem solving, and positive reappraisal. Cronbach's alpha coefficients ranging from .61 to .79 have been reported for the subscales, and a coefficient of .38 has been reported for convergent and discriminant validity (Brown, 1994). In Iran, the psychometric properties of the questionnaire were investigated by Padyab et al. (2012). Cronbach's alpha coefficients for the subscales ranged from .62 to .81, and the convergent validity coefficient was reported to be .35 (Padyab et al., 2012).

2.3. Data Analysis

The collected data were first analyzed using descriptive statistics. Inferential statistical analysis was subsequently conducted using regression analysis in SPSS version 27.

3. Findings and Results

The initial sample consisted of 200 patients with bipolar disorder. Seven participants were excluded from the analysis because of incomplete questionnaires or outlying data. Consequently, the final analyses were conducted on data from 193 participants. Table 1 presents the participants' demographic characteristics. As shown in Table 1, the largest proportion of participants had a high school diploma or lower educational qualification.

Table 1

Demographic Characteristics of the Participants

Variable	Mean	Standard Deviation	Frequency	Percentage
Age	36.45	2.25	—	—
Educational level				
High school diploma or lower	—	—	91	47.15
Associate or bachelor's degree	—	—	83	42.48
Master's degree	—	—	14	7.25
Doctoral degree	—	—	5	2.12
Marital status				
Married	—	—	102	52.84
Single	—	—	91	47.16

The results concerning the normality of the variables, variance inflation factors, and tolerance indices are presented in Table 2. As indicated by the skewness and kurtosis values, the participants' data were normally distributed. The other assumptions underlying simultaneous multiple regression analysis are also presented in Table 2.

Table 2

Skewness, Kurtosis, Tolerance, and Variance Inflation Factor Values for the Study Variables

Variable	Skewness	Kurtosis	Tolerance	Variance Inflation Factor
Stressful life events	−0.02	0.09	0.82	1.21
Cognitive reappraisal	−0.31	0.01	0.76	1.31
Expressive suppression	−0.25	−0.14	0.74	1.34
Confrontive coping	−0.35	0.94	0.65	1.52
Distancing	−0.20	−0.22	0.63	1.58
Self-control	−0.16	0.32	0.63	1.56
Escape–avoidance	0.08	0.11	0.62	1.59
Planful problem solving	0.23	0.10	0.71	1.39
Positive reappraisal	−0.04	−0.10	0.59	1.68
Seeking social support	0.05	0.15	0.63	1.56

Simultaneous multiple regression analysis was used to predict suicidal behaviors based on emotion regulation, coping strategies, and stressful life events. The analysis-of-variance results indicated that the regression model significantly predicted suicidal behaviors. The adjusted coefficient of determination was 0.39, indicating that emotion regulation, coping strategies, and stressful life events jointly explained 39% of the variance in suicidal behaviors.

Table 3

Analysis of Variance for the Regression Model Predicting Suicidal Behaviors Based on Emotion Regulation, Coping Strategies, and Stressful Life Events

Model	Sum of Squares	df	Mean Square	Adjusted R^2	F	p
Regression	112.614	10	11.261	0.39	13.428	.001
Residual	152.640	182	0.839	—	—	—
Total	265.254	182	—	—	—	—

As shown by the standardized regression coefficients presented in Table 4, stressful life events ($\beta = 0.23$, $p = .001$), cognitive reappraisal ($\beta = -0.13$, $p = .036$), and expressive suppression ($\beta = 0.23$, $p = .001$) were statistically significant predictors of suicidal behaviors. The remaining standardized regression coefficients are also presented in Table 4.

Table 4

Regression Coefficients for Predicting Suicidal Behaviors Based on Stressful Life Events, Emotion Regulation, and Coping Strategies

Variable	Unstandardized B	Standardized β	t	p
Constant	4.124	—	3.781	.001
Stressful life events	0.130	0.23	3.76	.001
Cognitive reappraisal	−0.05	−0.13	−2.06	.036
Expressive suppression	0.07	0.23	3.52	.001
Confrontive coping	−0.04	−0.05	−0.81	.410
Distancing	0.02	0.05	0.80	.410
Self-control	−0.02	−0.03	−0.42	.670
Escape–avoidance	0.10	0.21	2.96	.003
Planful problem solving	−0.05	−0.13	−1.97	.041

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Positive reappraisal	0.01	0.03	0.44	.650
Seeking social support	−0.01	−0.03	−0.52	.600

4. Discussion

The present study investigated the predictive roles of stressful life events, emotion-regulation strategies, and coping strategies in suicidal behaviors among patients with bipolar disorder. The findings indicated that the overall regression model was statistically significant and that the predictor variables collectively explained 39% of the variance in suicidal behaviors. Specifically, stressful life events, cognitive reappraisal, expressive suppression, escape–avoidance, and planful problem solving significantly predicted suicidal behaviors. Stressful life events, expressive suppression, and escape–avoidance were positively associated with suicidal behaviors, whereas cognitive reappraisal and planful problem solving were negatively associated with these behaviors. In contrast, confrontive coping, distancing, self-control, positive reappraisal, and seeking social support did not independently predict suicidal behaviors when the effects of the other variables were simultaneously controlled. These findings support a multidimensional conceptualization of suicidality in bipolar disorder, according to which suicidal behavior is not explained solely by the psychiatric diagnosis or mood symptoms but results from the interaction of environmental stress, emotional vulnerability, and the strategies used to manage distress.

The finding that stressful life events positively predicted suicidal behaviors is consistent with evidence indicating that adverse life experiences constitute important proximal and cumulative risk factors for suicidal ideation and attempts. Liu and Miller reported that stressful life events, particularly interpersonal loss, humiliation, conflict, rejection, and major disruptions in social functioning, are consistently associated with suicidal ideation and behavior across clinical and nonclinical populations (Liu & Miller, 2014). Stressful events may increase suicide risk by intensifying feelings of helplessness, hopelessness, defeat, and entrapment, particularly when individuals perceive that the stressful situation is uncontrollable or irreversible. In patients with bipolar disorder, the effects of life stress may be amplified because stress can destabilize mood, disrupt sleep and social rhythms, worsen depressive or mixed symptoms, and impair treatment adherence. Therefore, stressful experiences may act not only as direct psychological burdens but also as triggers for affective episodes associated with elevated suicide risk.

This result also aligns with models of suicidality in bipolar disorder that emphasize the interaction between illness-related vulnerability and environmental stress. Malhi et al. argued that suicidality in bipolar disorder emerges through a complex combination of affective instability, impulsivity, hopelessness, cognitive vulnerability, and psychosocial stressors (Malhi et al., 2013). Similarly, Miller and Black emphasized that suicide risk in bipolar disorder is shaped by multiple factors, including previous attempts, depressive and mixed episodes, comorbid conditions, interpersonal difficulties, and stressful life events (Miller & Black, 2020). Patients with bipolar disorder frequently experience secondary stressors arising from the disorder itself, such as occupational instability, financial difficulties, relationship breakdown, hospitalization, stigma, and reduced social functioning. These stressors can create a self-reinforcing cycle in which mood symptoms generate adverse life circumstances, and those circumstances subsequently exacerbate symptoms and suicidal tendencies.

The association between stressful life events and suicidal behavior may also be interpreted through the interpersonal theory of suicide. According to this perspective, stressful interpersonal experiences can contribute to thwarted belongingness and perceived burdensomeness, which are central psychological conditions underlying suicidal desire. Repeated experiences of rejection, interpersonal conflict, loss of social roles, or dependence on family members may lead patients to believe that they are disconnected from others or constitute a burden to them. These perceptions may become especially intense during depressive episodes, when negative self-appraisals and hopeless expectations are prominent (Stewart, 2022). Sher and Oquendo similarly emphasized that suicide risk assessment should include recent psychosocial stressors, interpersonal losses, hopelessness, agitation, and changes in behavioral functioning rather than relying exclusively on diagnostic status (Sher & Oquendo, 2023). Thus, the current finding suggests that the severity and accumulation of stressful life events should be systematically evaluated in suicide-risk assessment among patients with bipolar disorder.

The significant negative association between cognitive reappraisal and suicidal behavior indicates that patients who were more capable of changing their interpretation of

emotionally distressing situations reported lower levels of suicidal behavior. This result is consistent with the conceptualization of cognitive reappraisal as an adaptive emotion-regulation strategy. Reappraisal allows individuals to modify the meaning attributed to an event before the emotional response becomes fully developed. Through reinterpretation, a person may view a stressful situation as temporary, manageable, less personally threatening, or open to alternative solutions. This process can reduce the intensity of negative affect and prevent the escalation of hopelessness, shame, anger, or psychological pain into suicidal ideation.

The present result is supported by research demonstrating a robust relationship between emotion-regulation processes and suicidality. Colmenero-Navarrete et al. concluded that difficulties in emotion regulation and reliance on maladaptive regulatory strategies are associated with suicidal ideation and attempts, whereas adaptive strategies may function as protective factors (Colmenero-Navarrete et al., 2022). Neacsiu et al. similarly found that individuals exhibiting suicidal behavior frequently experience problems identifying, accepting, tolerating, and modulating intense emotional states (Neacsiu et al., 2018). When emotional pain is perceived as overwhelming and unchangeable, suicidal behavior may be considered a means of escaping or terminating that pain. Cognitive reappraisal may reduce this risk by increasing psychological distance from distressing thoughts and enabling patients to generate less catastrophic interpretations of stressful experiences.

The psychometric findings reported for the Persian version of the Emotion Regulation Questionnaire also support the relevance of assessing cognitive reappraisal and expressive suppression in Iranian populations (Foroughi et al., 2021). Within the cultural and clinical context of the current study, cognitive reappraisal may have helped patients reinterpret interpersonal conflicts, illness-related limitations, and adverse life events in less threatening ways. In bipolar disorder, where emotional responses can be intense and rapidly changing, the ability to cognitively reframe distress may reduce emotional escalation and facilitate more deliberate decision-making. However, reappraisal requires cognitive flexibility, attentional control, and the capacity to consider alternative meanings. These capacities may be impaired during severe depressive, manic, or mixed episodes. Consequently, patients with more developed reappraisal skills may be better able to protect themselves against the transition from emotional distress to suicidal action.

Expressive suppression positively predicted suicidal behaviors, indicating that patients who more frequently inhibited the outward expression of their emotions reported greater suicidal risk. This result is compatible with evidence identifying suppression as a potentially maladaptive emotion-regulation strategy when used habitually. Suppression may reduce the visible expression of emotion without reducing the internal emotional experience. As a result, the individual may continue to experience intense sadness, anger, anxiety, guilt, or despair while appearing externally controlled. Persistent suppression can also limit emotional communication, prevent others from recognizing the individual's distress, and reduce opportunities to receive interpersonal support. In the context of suicide risk, this is particularly important because patients may conceal suicidal thoughts and emotional crises from family members and clinicians.

The positive relationship between suppression and suicidal behavior aligns with the broader finding that emotion-regulation difficulties contribute to suicidal behavior (Colmenero-Navarrete et al., 2022; Neacsiu et al., 2018). In patients with bipolar disorder, suppression may be used to avoid stigma, prevent conflict, or conceal symptoms. Nevertheless, repeated inhibition of emotional expression can increase internal pressure and feelings of isolation. It may also reinforce the belief that emotions are unacceptable, dangerous, or impossible for others to understand. Such beliefs can intensify perceived disconnection and reduce help-seeking during crises. The result therefore suggests that the mere control of outward emotional expression should not be interpreted as effective emotional regulation. Clinicians should distinguish between genuine modulation of emotional experience and the concealment of unresolved distress.

Escape–avoidance was another significant positive predictor of suicidal behavior. This finding indicates that patients who responded to stress through withdrawal, avoidance, wishful thinking, or attempts to escape from the problem were more likely to report suicidal behaviors. This result is consistent with previous studies demonstrating that avoidant coping is associated with depression, hopelessness, and suicide risk. Horwitz et al. found that coping styles prospectively predicted depression and suicide risk among psychiatric emergency patients, with avoidant responses associated with poorer psychological outcomes (Horwitz et al., 2018). Lew et al. also reported significant associations among stress, depression, anxiety, hopelessness, coping styles, and suicide, indicating that maladaptive coping can

intensify the effects of psychological distress (Lew et al., 2019).

The present finding is also consistent with research specifically examining suicidal individuals and patients with bipolar disorder. Bazrafshan et al. showed that individuals who had attempted suicide frequently relied on ineffective or avoidance-oriented coping strategies (Bazrafshan et al., 2014). Poyraz et al. similarly found that coping strategies were associated with suicidal ideation and suicide attempts in bipolar disorder, supporting the role of coping patterns in differentiating patients with varying levels of suicide risk (Poyraz et al., 2021). Avoidance may provide temporary relief by reducing immediate exposure to distressing thoughts or situations; however, it does not resolve the underlying problem. Over time, unresolved stressors accumulate, practical difficulties worsen, and the individual may experience increasing helplessness and entrapment. In this sense, suicidal behavior may become an extreme form of escape from emotional and situational pain.

The network analysis conducted by He et al. further supports the close relationship among coping styles, meaning in life, and suicidal ideation (He et al., 2025). Avoidant coping may weaken the individual's sense of agency and prevent engagement with meaningful goals, relationships, or solutions. In patients with bipolar disorder, repeated withdrawal from occupational, interpersonal, or therapeutic demands may increase functional impairment and reinforce beliefs that recovery is impossible. Furthermore, avoidance can interfere with medication adherence, attendance at clinical appointments, and communication about emerging symptoms. The present finding therefore indicates that escape–avoidance is not merely a passive response but a clinically important process that may maintain or intensify suicide risk.

In contrast, planful problem solving negatively predicted suicidal behavior. This finding suggests that patients who used deliberate, organized, and solution-focused strategies were less likely to engage in suicidal behaviors. Planful problem solving involves defining the problem, evaluating possible solutions, anticipating consequences, selecting an appropriate response, and implementing a structured plan. Such strategies may reduce feelings of helplessness and restore a sense of control. When individuals perceive that practical or interpersonal problems can be addressed through specific actions, suicide may be less likely to be viewed as the only available solution.

This finding aligns with evidence that active and problem-focused coping may protect against suicidal ideation and attempts. Poyraz et al. demonstrated that the ways in which patients with bipolar disorder cope with stress are associated with suicide-related outcomes (Poyraz et al., 2021). Fletcher et al. also reported prospective relationships among cognitive styles, coping styles, and symptom expression in bipolar disorder, indicating that adaptive psychological responses may influence the clinical course of the illness (Fletcher et al., 2014). Problem-solving skills may be particularly protective because they counteract cognitive constriction, a condition in which distressed individuals perceive few alternatives and become increasingly focused on suicide as an escape. By generating multiple options and breaking complex difficulties into manageable steps, planful problem solving can reduce perceived entrapment and strengthen self-efficacy.

The protective role of planful problem solving may also be related to the maintenance of meaning and future orientation. He et al. showed that coping styles are connected to meaning in life and suicidal ideation within a broader psychological network (He et al., 2025). Effective problem solving requires the assumption that future outcomes can be influenced and that action remains worthwhile. This orientation contrasts with the hopelessness and perceived irreversibility commonly associated with suicidal crises. Therefore, interventions that strengthen problem definition, generation of alternatives, decision-making, and implementation skills may reduce suicidal vulnerability among patients with bipolar disorder.

Confrontive coping, distancing, self-control, positive reappraisal, and seeking social support were not significant independent predictors in the simultaneous regression model. These nonsignificant findings do not necessarily indicate that the strategies are unrelated to suicidal behavior. Rather, their effects may overlap with stronger predictors or depend on contextual factors not examined in the study. For example, seeking social support may be beneficial only when supportive individuals are available and responses are validating rather than critical. Self-control may be adaptive when it reflects impulse regulation but maladaptive when it involves excessive emotional inhibition. Distancing may temporarily reduce emotional overload but may also become avoidance if used persistently. Positive reappraisal may require sufficient emotional stability and may be less effective during severe mood episodes. In a multivariate model, the unique contribution of these variables may therefore become nonsignificant after accounting for stressful life events, cognitive reappraisal, suppression, escape–avoidance, and planful problem solving.

The nonsignificant effect of seeking social support may also be understood in relation to the interpersonal difficulties frequently experienced by individuals with bipolar disorder. Social support is not determined solely by an individual's effort to seek help; it also depends on the availability, quality, and responsiveness of the social network. Previous mood episodes, interpersonal conflict, stigma, or caregiver burden may weaken support systems. Therefore, an individual may seek support but receive criticism, misunderstanding, or rejection, limiting its protective effect. Interventions such as Interpersonal and Social Rhythm Therapy may be useful because they address both interpersonal functioning and the regularity of daily social rhythms (Mazaheri et al., 2026). Stabilizing routines and improving interpersonal communication may indirectly reduce suicide risk by decreasing stress exposure and increasing access to effective support.

The finding that the study variables explained 39% of the variance in suicidal behavior is clinically meaningful, particularly because stressful life events, emotion regulation, and coping strategies are potentially modifiable. However, it also indicates that a substantial proportion of variance remains unexplained. Suicide risk in bipolar disorder is influenced by additional factors, including the severity and polarity of mood episodes, mixed features, impulsivity, hopelessness, previous suicide attempts, substance use, comorbid personality or anxiety disorders, family history, access to lethal means, treatment adherence, and social isolation (Malhi et al., 2013; Miller & Black, 2020; Sher & Oquendo, 2023). Future models should therefore integrate psychological variables with clinical, interpersonal, and biological indicators to improve predictive accuracy.

The use of a validated Persian measure of suicidal behavior strengthens the interpretation of the findings. The Suicidal Behaviors Questionnaire–Revised has demonstrated acceptable psychometric properties in Iran and provides a concise assessment of lifetime suicidal behavior, recent ideation, communication of suicidal intent, and the perceived likelihood of future attempts (Amini-Tehrani et al., 2020). Nevertheless, suicide-risk assessment should not be limited to questionnaire scores. Because some patients may conceal suicidal thoughts, especially when expressive suppression is prominent, structured clinical interviews, collateral information, previous attempt history, and ongoing monitoring remain essential.

5. Conclusion

Overall, the findings demonstrate that suicidal behavior in bipolar disorder is associated with an interaction between external adversity and internal regulatory processes. Stressful life events may initiate or intensify psychological distress, while cognitive reappraisal and planful problem solving may reduce its impact. Conversely, expressive suppression and escape–avoidance may prevent the effective processing and resolution of distress, thereby increasing suicidal vulnerability. These results reinforce the importance of moving beyond a purely symptom-based understanding of suicide risk and considering how patients interpret, regulate, and respond to stressful experiences.

The present study had several limitations. First, its correlational and cross-sectional design prevents causal conclusions regarding the relationships among stressful life events, emotion regulation, coping strategies, and suicidal behaviors. Second, convenience sampling from two psychiatric hospitals in Tehran may limit the generalizability of the findings to patients receiving treatment in other regions, outpatient settings, private clinics, or community populations. Third, all variables were assessed using self-report questionnaires, which may have been affected by recall bias, social desirability, limited insight, or intentional concealment of suicidal thoughts. Fourth, the study did not distinguish between bipolar I and bipolar II disorders or control for current mood episode, illness severity, medication use, psychiatric comorbidity, previous suicide attempts, and duration of illness. Fifth, the severity, timing, and type of stressful life events were not examined separately. Finally, the study did not include clinician-administered diagnostic or suicide-risk interviews, and the findings may therefore reflect participants' subjective reports rather than comprehensive clinical evaluations.

Future studies should use longitudinal designs to determine whether stressful life events, emotion-regulation strategies, and coping patterns prospectively predict the emergence or recurrence of suicidal ideation and attempts. Researchers should recruit larger and more diverse samples from multiple regions and treatment settings and compare patients with bipolar I disorder, bipolar II disorder, and other mood disorders. Future investigations should assess participants across depressive, manic, mixed, and euthymic phases to clarify whether the predictive effects of emotion regulation and coping vary according to mood state. Clinical variables such as previous attempts, hopelessness, impulsivity, substance use, medication adherence, sleep

disturbance, social rhythm disruption, and comorbid disorders should be incorporated into more comprehensive predictive models. Studies using structured interviews, behavioral tasks, ecological momentary assessment, and reports from family members or clinicians may reduce the limitations associated with self-report measures. Mediation and moderation models should also examine whether emotion regulation and coping strategies explain or alter the relationship between stressful life events and suicidal behavior.

Mental health professionals should routinely assess recent and cumulative stressful life events, habitual emotion-regulation strategies, and coping responses when evaluating suicide risk in patients with bipolar disorder. Treatment programs should include structured training in cognitive reappraisal, emotional awareness, distress tolerance, and planful problem solving. Clinicians should help patients identify avoidant responses, develop alternative approaches to stressful situations, and communicate emotional distress rather than suppressing it. Individualized safety plans should specify warning signs, coping actions, supportive contacts, professional resources, and procedures for restricting access to lethal means. Family members may be educated to recognize concealed distress, changes in daily routines, social withdrawal, and increases in avoidance. Integrating medication management with cognitive-behavioral, interpersonal, social-rhythm, and skills-based interventions may provide a more comprehensive approach to reducing suicidal behaviors in patients with bipolar disorder.

Authors' Contributions

Authors equally contributed to this article.

Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

Transparency Statement

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Declaration of Interest

The authors report no conflict of interest.

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Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants. The study protocol was approved by the Research Ethics Committee of Islamic Azad University, Tonekabon Branch, under the ethics code IR.IAU.TON.REC.1405.021.

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