

Husn al-Zhann, Islamic practices, and mood stability in bipolar disorder: A seven-year longitudinal single-case study

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Abstract: Achieving long-term mood stability in bipolar disorder is challenging. Although there are effective pharmacological therapies for acute episodes of the disorder, mood variability, along with other symptoms, persists in many individuals, indicating the need for self-regulation processes in everyday cognitive-behavioural systems. This study aimed to explore the longitudinal association between mood stability in bipolar disorder, Husn al-Zhann (positive cognitive-spiritual orientation), and Islamic religious practices. This longitudinal single-case study employed a Single-Case Experimental Design (SCED) to follow one individual diagnosed with bipolar disorder over a seven-year period. Monthly repeated assessments (82 observations; April 2019–January 2026) were conducted to examine within-person changes in mood symptoms, cognitive-spiritual orientation, and Islamic religious practices. Time series analysis and visual trend analysis, along with non-overlapping indices, were used to measure associations in subjects for YMRS, MDRS-22, Husn al-Zhann, and persistence in prayer and Qur'an recitation. The severity and variability of manic and depressive symptoms in this study decreased over time. Significant increases in Husn al-Zhann and non-overlap from baseline to the end of the study in adherence to religious practices coincided with greater symptom stabilization over time. Structured religious practices and cognitive-spiritual orientation may be considered additional self-regulation components for improving long-term mood stability in culturally sensitive bipolar care.

Keywords: bipolar disorder; Husn al-Zhann; spirituality; mood stability; single-case time-series design



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Introduction

Bipolar disorder has traditionally been conceptualized as an episodic illness characterized by alternating manic and depressive episodes. However, increasing longitudinal evidence suggests that many individuals continue to experience persistent mood instability, cognitive impairment, and functional difficulties even during periods of remission (Malhi et al., 2015; Ortiz & Alda, 2018; Strejilevich et al.,

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2013). Persistent subthreshold manic, hypomanic, and depressive symptoms may continue between major episodes and are associated with relapse risk and functional impairment. This is in direct opposition to the episode-centered models of recovery (Ahn et al., 2017; O'Donnell et al., 2018; Simonetti et al., 2020). The functional impairments associated with disorders of the brain, particularly the bipolar disorder, has been the area of ongoing primary research in the area of neuropsychological studies, and has been described as the dysfunction of enduring executives; the impairment of cognitive flexibility, the impairment of operational self-control, the impairment of self-assessment, and operational self-control with the involvement of the dysregulation frontolimbic and enduring variability of the chronic mood (Afshari et al., 2020; Guglielmo et al., 2021; Kapczinski et al., 2016; Nguyen et al., 2017).

Through means of meaning and reappraisal, Spiritual coping shows benefits to emotional regulation (Dolcos et al., 2021; Garssen et al., 2021; Koenig et al., 2020). In the field of psychology of Islam, *husn al-zann* is defined as the assimilation of cognitive reappraisal, which diminishes fluidity of thought, and increases stability of cognitive appraisal (Basit & Rehman, 2025; Nabil et al., 2019; Rusydi, 2012). However, there is a significant lack of research (Ahn et al., 2017; Malhi et al., 2015) in studies that have been of a longitudinal nature, and that having been of an intrapersonal longitudinal nature, that consist of work, lattice and/or spiritual, executive, cognitive, and mood. Despite growing evidence supporting the psychological benefits of spirituality, important gaps remain. Few studies have investigated *Husn al-Zhann* as a dynamic cognitive-spiritual process using intensive longitudinal designs. Even fewer have integrated Islamic religious practices, executive functioning, cognitive distortions, self-regulation, and mood stability within a single longitudinal framework. The present study addresses these gaps by employing a seven-year longitudinal single-case design to examine within-person temporal changes in these interconnected processes.

Given the substantial within-person variability observed in bipolar disorder, longitudinal approaches are essential for understanding the dynamic processes underlying mood regulation and functional recovery. Bipolar disorder affects a person's entire life and is characterized by highly variable and non-linear changes in mood and functioning. Most of the evidence available focuses on cross-sectional or short-term studies, which is a key contributor to most of the evidence available being unable to address issues of state-trait distinctions, the issues and questions of directionality, and the developmental issues of the framework (de la Fuente-Tomás et al., 2020; Pfennig et al., 2017). The most heterogeneous illness trajectories, patterns of recurrence, and response to treatment of a given disorder are only detectable by longitudinal studies that have more extensive follow-up periods (Duffy & Grof, 2024; McInnis et al., 2022). Most of the significant within-person variability is overlooked on the group level (Morton et al., 2018). Time series and single case experimental research designs are ways of doing a focused and purposeful dense repeated measurement of a process, which is to identify a series of effects that are phase contingent and also identify the real world. Situations that impact a person's long-term mood stability for those suffering from bipolar disorder.

Beyond mood symptoms themselves, increasing evidence indicates that persistent neuropsychological impairments play a central role in maintaining instability in bipolar disorder. Evidence suggests that bipolar disorder comprises more than episodic changes in mood. Self-regulatory impairments can continue to persist even during periods of euthymia. Self-regulatory impairments can

cause difficulties in the daily functioning of individuals and can activate mood deterioration (Sabbah et al., 2024; Wang et al., 2023). The phenomenon of executive dysfunction, impulsivity, and emotional dysregulation is often seen together and is related to the recurrence and relapse of individuals. Emotion-related impulsivity has been found to cause more mood cycling, treatment adherence, and relapse (Sabbah et al., 2024; Salahshoori & Izadi, 2025; Wagner-Skacel et al., 2020; Yin, 2020). In contrast, protective factors such as self-awareness and metacognitive monitoring are able to strengthen executive functioning, emotional regulation, and control as well as adaptive coping even when the person has cognitive impairments (Salahshoori & Izadi, 2025; Wagner-Skacel et al., 2020). Self-monitoring and thought control have been shown to improve executive functioning and control of irritability (Salahshoori & Izadi, 2025). Cognitive distortions, including automatic thoughts and rumination, weaken self-control systems and emotional regulation and were accompanied by higher relapse risk (Aral et al., 2023; Carneiro et al., 2025; Yesilyaprak et al., 2019; Zhao, 2022). Due to this reason, the variables of executive dysfunction, impulsivity, self-awareness, and cognitive distortions must be examined in the context of their mediating variables in research done longitudinally on the stability of mood.

An upsurging interest within neuropsychology and behavioral sciences is the use of spirituality and rituals for the brain's organization, emotional processing, and self-regulation. In Islam, the rituals of prayer, or *ṣalāh*, and the act of reciting the Qur'an, known as *tilāwah*, are intricate devotional systems that employ the use of repetition, rhythm, focal engagement, and the structure of time and serve as self-regulation behavioral control frameworks (Hasim et al., 2023; Mohd et al., 2022). Due to the rituals' structuring and timing, they are able to diminish behavioral variability and establish a norm or routine. It is well documented that establishing a norm or routine helps combat stress, anxiety, and depression (Mashitah & Lenggono, 2020; Mat-Nor et al., 2019; Moulai et al., 2023)). The practice of Qur'anic recitation and listening involves the use of selective attention and control of distractions, just as in Mindfulness-Based Cognitive Therapy (MBCT). There is literature documenting increased alpha wave activity during Qur'anic listening, which is evidence of a positive change in attention control and emotional regulation (Naqvi et al., 2020; Nayef & Wahab, 2018; Silabdi et al., 2021). Also, *ṣalāh* and *tilāwah* serve as anchors to the circadian systems and offer support to the autonomic nervous systems, heart rate variability, and physiological coherence, and reduction of cortisol (Mawaddah et al., 2025; Moulai et al., 2023; Mohd et al., 2022). The above mechanisms pose a behavioral mood stabilizing effect, which in the case of bipolar disorder can be of great help (Hasim et al., 2023; Mat-Nor et al., 2019; Silabdi et al., 2021).

Among Islamic spiritual constructs, *Husn al-Zhann* represents a particularly relevant cognitive-spiritual mechanism because it involves meaning-based appraisal and interpretation of adversity. *Husn al-zhann*, or having a good/husn thought or expectation, pertains to having a positive expectation toward God, which can be seen as a more meaning-based cognitive reappraisal of a situation nestled in one's faith, as opposed to a generalized optimism. It also perceives adversity as a manifestation of divine wisdom and benevolence and, as a result, alters one's emotional and cognitive responses toward stress (Basit & Rehman, 2025; Omais & Antônio dos Santos, 2026). While CBT focuses on the cognitive distortions and refutes them in a factual sense, as opposed to that, *husn al-zhann* interprets difficulties in a spiritually positive way, similar to acceptance strategies (Nabil et al., 2019; Rusydi, 2012; Safira & Sabran, 2025). Research supports that it strengthens psychological resilience and stabilizes mood, especially in

the case of bipolar disorder, and decreases emotional reactivity, rumination, and sense of hopelessness (Basit & Rehman, 2025; Nabil et al., 2019).

Taken together, these findings suggest an integrated model in which Islamic religious practices may influence mood regulation through cognitive-spiritual appraisal and neuropsychological self-regulation processes. Taken together, existing evidence suggests a model whereby, i.e. Islamic spiritual practices, cognitive focus, executive control, and mood regulation over time. The studies of Hasim et al. (2023), Moulaei et al. (2023), and Silabdi et al. (2021) conceptualize Salat and Qur'anic recitation as regulatory structures and mechanisms poised to influence cognitive focus as well as physiological responses like attention, daily rhythms, and affective arousal and physiological rhythms. It is expected that these practices will affect cognitive focus, including *husn al-zhann* and cognitive distortions, that mediate emotional reactivity and rumination (Aral et al., 2023; Basit & Rehman, 2025; Carneiro et al., 2025; Nabil et al., 2019). Executive control, which involves inhibition and self-regulation, is the most proximal mechanism that controls cognition and emotional stability because of its relation to mood relapse risk in bipolar disorder (Sabbah et al., 2024; Wang et al., 2023).

Bipolar disorder entails a consistent within-person state of variability of persistent duration within the domains of mood, thought, and self-control, even during the euthymic state. There are long-standing longitudinal studies of the core symptoms, and Sabbah et al. (2024) and Aral et al. (2023) demonstrate the connection between relapses, instability, and beyond core symptoms of executive impairment, emotion dysregulation, impulsivity, and cognition. In parallel, the literature of Islamic psychology has documented and published findings of structured techniques like *ṣalāh* (prayers), Qur'anic recitation, and *husn al-zhann* (thinking well) that have coping and meaning-focused reappraisal and functioning systems that help within the context of self-regulation both emotionally and cognitively (Basit & Rehman, 2025; Hasim et al., 2023).

Conventional methodologies and especially the cross-sectional and group-averaged perceptions and methodologies typically obscure a lot of the emergent phenomena both within and among people and co-evolving systems. There is an extensive body of methodological critiques that advocate for and describe the necessary approaches of Intensive Longitudinal Methods (ILMs), Ecological Validity, and Longitudinal designs that capture day-to-day adaptive processes of the study subjects (Andrade, 2018; Kihlstrom, 2021). The use of Single Case Experimental Design (SCED) coupled with time-series approaches allows subjects to act as their own comparison groups, and as a result, they are ideal for the study of temporal relationships and intraindividual shifts and changes, as well as fine-grained studies of these phenomena (Jusko et al., 2025; Krasny-Pacini & Evans, 2018). These approaches are also the most appropriate for longitudinal designs that are focused on mediation (Miočević et al., 2022).

Although previous studies have demonstrated positive associations between religiosity, spirituality, and mental health, several important gaps remain. First, most studies have relied on cross-sectional or short-term designs, limiting understanding of how Islamic cognitive-spiritual processes evolve within individuals over extended periods. To our knowledge, no previous study has prospectively examined the co-development of *Husn al-Zhann*, Islamic religious practices, neuropsychological self-regulation, and mood stability using an intensive seven-year longitudinal single-case design. Second, existing research has

primarily examined religiosity as a general protective factor rather than investigating Husn al-Zhann as a dynamic cognitive reappraisal mechanism that may contribute to self-regulation in bipolar disorder. Third, few studies have integrated Islamic spiritual practices with neuropsychological constructs such as executive functioning, cognitive distortions, self-awareness, and self-regulation within a longitudinal framework. To address these gaps, the present study employed a seven-year longitudinal single-case experimental design (SCED) with intensive monthly repeated measurements to examine the temporal co-development of Islamic religious practices, Husn al-Zhann, neuropsychological self-regulation, and mood stability in bipolar disorder.

Accordingly, this study aims not merely to examine whether Islamic practices are associated with mood stability, but to investigate how Husn al-Zhann and structured Islamic religious practices co-evolve with neuropsychological self-regulation and mood stability over seven years within a single individual diagnosed with bipolar disorder.

Unlike conventional longitudinal cohort studies, the present investigation employed a longitudinal single-case design to examine within-person changes over time. One individual diagnosed with bipolar disorder was followed prospectively using monthly repeated assessments across seven years. This intensive longitudinal approach was chosen because bipolar disorder is characterized by substantial intra-individual variability that may not be adequately captured using group-based designs.

Method

Study Design

This study employed a longitudinal single-case experimental design (SCED) to prospectively follow one individual diagnosed with bipolar disorder over a seven-year period (April 2019–January 2026). A total of 82 monthly observations were collected to examine within-person temporal changes in mood symptoms, cognitive-spiritual orientation, neuropsychological self-regulation, and Islamic religious practices under naturalistic conditions. This design was selected because bipolar disorder is characterized by substantial intra-individual variability that is often obscured in group-based studies.

SCED is particularly appropriate when researchers seek to determine whether, and to what extent, a specific variable influences outcomes within an individual over an extended period. This approach is especially relevant for chronic psychiatric conditions such as bipolar disorder, where symptom trajectories vary considerably across individuals and experimental manipulation is ethically constrained. Accordingly, the present study emphasized systematic longitudinal observation under naturalistic conditions rather than experimental control.

To facilitate interpretation, the observation period was divided into three analytically defined phases that corresponded as closely as possible to naturally occurring and clinically stable periods. Phase A (Baseline/Unstable Phase) covered April 2019 to December 2020. Phase B1 (Partial and Inconsistent Intervention Phase) extended from January 2021 to December 2022, whereas Phase B2 (Stable and Internalized Intervention Phase) covered January 2023 to January 2026. These phases were defined retrospectively based on longitudinal clinical patterns rather than experimentally imposed conditions.

Consistent with SCED methodology, the study relied on systematic documentation of naturally occurring behavioral and psychological changes while minimizing researcher interference.

Participant

The participant was a 45-year-old adult diagnosed with bipolar affective disorder (ICD-10: F31) in 2006, with the diagnosis confirmed by psychiatric services in Jakarta. Between 2024 and 2026, the participant remained predominantly euthymic and demonstrated stable psychosocial functioning, with only mild residual symptoms. Earlier clinical episodes included recurrent manic-like relapses followed by periods of withdrawal, as documented through continuous self-monitoring and clinical records. Documentary evidence and psychotherapy records were used to provide contextual information regarding the participant's clinical history while preserving the integrity of the longitudinal research variables.

Measures

To minimize construct overlap and reduce analytic inflation, the assessment instruments were organized according to their functional role within the conceptual model. Primary clinical outcomes consisted of the Young Mania Rating Scale (YMRS) (Young et al., 1978), which assessed the severity of manic symptoms, and the Male Depression Risk Scale-22 (MDRS-22) (Herreen et al., 2022), which assessed depressive symptoms. These scales served as the primary indicators of mood instability. For the purposes of this study, mood stability was operationally defined as a progressive reduction in both the severity and month-to-month variability of manic symptoms (measured using the Young Mania Rating Scale [YMRS]) and depressive symptoms (measured using the Male Depression Risk Scale-22 [MDRS-22]), together with greater temporal consistency across repeated monthly assessments. Accordingly, mood stability was conceptualized as sustained reductions in symptom severity together with reduced temporal variability across repeated assessments, rather than the complete absence of mood symptoms. Secondary psychological outcomes included the Depression Anxiety Stress Scale (DASS-42) (Shayan et al., 2025) to assess psychological distress and the Barratt Impulsiveness Scale-Revised (BIS-R-21) (Kapitány-Fövény et al., 2020) to evaluate impulsivity traits.

Neurocognitive mediating variables comprised the Dysexecutive Questionnaire (DEX) (Gerstorf et al., 2008), which measured executive dysfunction in everyday life; the Self-Regulation Scale (Carey et al., 2004), which assessed emotional and behavioral self-regulation; the Self-Awareness Scale monitoring (Sutton, 2016), which evaluated metacognitive awareness and insight; and the Cognitive Distortions Questionnaire (CD-Quest) (De Oliveira et al., 2015), which measured maladaptive cognitive patterns. These constructs were conceptualized as potential mechanisms linking spiritual practice to clinical outcomes.

Spiritual practice variables represented naturally occurring behavioral and cognitive processes rather than experimentally imposed interventions. These included the Husn al-Zhann Questionnaire (Rusydi, 2012), which assessed positive cognitive-spiritual interpretations of divine decree, and the Religious Practice Intensity Scale, which measured the frequency and consistency of daily *ṣalāh* and Qur'anic recitation.

Data Collection Procedure

Monthly quantitative assessments were conducted throughout the seven-year observation period. To strengthen interpretive validity, quantitative findings were supplemented with qualitative data derived from clinicians' observational notes. Because prolonged longitudinal assessment may introduce response-shift bias, periodic clinician-assisted item reviews were conducted to re-anchor participants' interpretations while preserving the original response scales. Data collection procedures were maintained as consistently as possible across the observation period to maximize longitudinal comparability.

Data Analysis

Given the single-case design, the analyses focused primarily on within-person change rather than population-level inference. Visual time-series analysis was first performed to examine changes in level, trend, variability, and immediacy of change across study phases, with phase boundaries clearly indicated in all graphical displays.

To quantify intervention-related changes, the Percentage of Non-Overlapping Data (PND) was calculated to estimate the extent to which observations during the intervention phases differed from baseline levels. All PND findings were interpreted conservatively in accordance with established methodological recommendations for single-case research.

Exploratory cross-lagged correlations were subsequently conducted to examine temporal associations between spiritual practice variables and subsequent mood indicators. Because of the single-case nature of the study, these analyses were interpreted as evidence of temporal association rather than causal relationships.

Finally, qualitative triangulation was performed by integrating narrative journal entries and clinicians' observation notes with the quantitative findings. This triangulation provided a contextual understanding of clinically meaningful changes, particularly during periods characterized by substantial mood instability.

Ethical Considerations

The study adhered to established ethical principles for psychological research involving human participants. Written informed consent was obtained before participation. Throughout the study, participant autonomy, confidentiality, and privacy were maintained, and all observations were conducted without interfering with routine psychiatric treatment or standard clinical care.

Result

Overview of the Longitudinal Dataset

The present analysis was based on a longitudinal dataset comprising 82 consecutive monthly observations collected between April 2019 and January 2026. All scheduled monthly assessments were completed, resulting in a complete dataset with no missing observations throughout the study period. For analytical purposes, the observation period was divided into three phases according to longitudinal patterns of symptom variability and behavioral stability. Phase A (Baseline/Unstable Phase) covered April

2019 to December 2020, Phase B1 (Partial Stabilization Phase) extended from January 2021 to December 2022, and Phase B2 (Stabilized Phase) encompassed January 2023 to January 2026. These analytically defined phases were applied consistently across both the quantitative and qualitative analyses to facilitate the interpretation of longitudinal changes over time.

Longitudinal Changes in Mood Stability

Manic Symptoms (YMRS)

During Phase A, YMRS scoring was extremely variable, with some observations hitting the severe clinical range and triggering the highest recorded activity levels, the lowest recorded sleep levels, outbursts of impulsivity, and recorded social fights in the observational journal. In Phase B1, YMRS showed less severe peak scores, with some scores still showing high levels of observation. The extreme variability of Phase A of the scoring system was more extreme than that of B1. By Phase B2, the scoring system showed consistently lower and less variable scores than A and B1. The raw scores showed less extreme variability, and the highest recorded extreme was lower than the Phase A baseline showed, clearly indicating changes in the clinical range in the MMRS patterns in the different phases of the study.

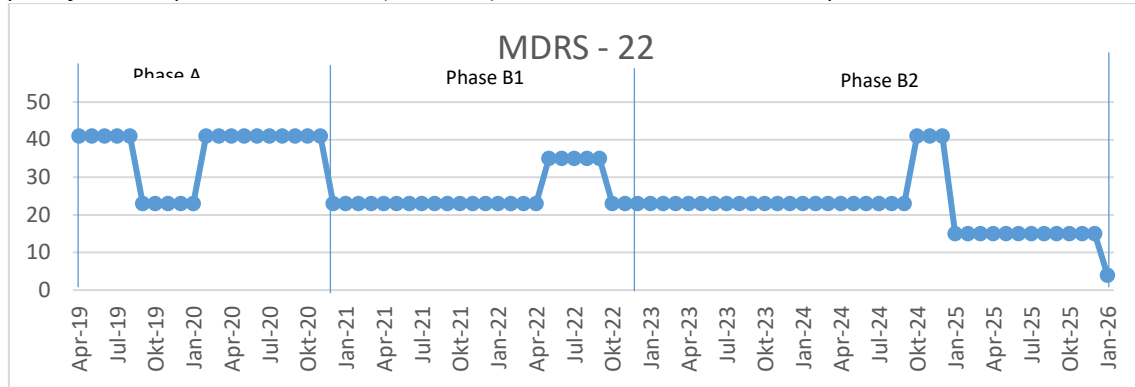
Depressive Symptoms (MDRS-22)

Elevation in the MDRS-22 scores, which were a result of multiple scores in the severely depressed range, prevailed for the A phase. Observation notes for this time period commented on the lengthy durations of the individual's sadness and withdrawal, as well as motivation and social withdrawal, and feelings of hopelessness. Gradual but incomplete reductions in depressive symptoms characterized Phase B1. Psychosocial stressors in the environment were the reasons behind the increases in depressive symptoms. When compared to the previous phases, scores during Phase B2 were lower and more stable across the board. Phase B2 had minor and less frequent increases as compared to the decreases.

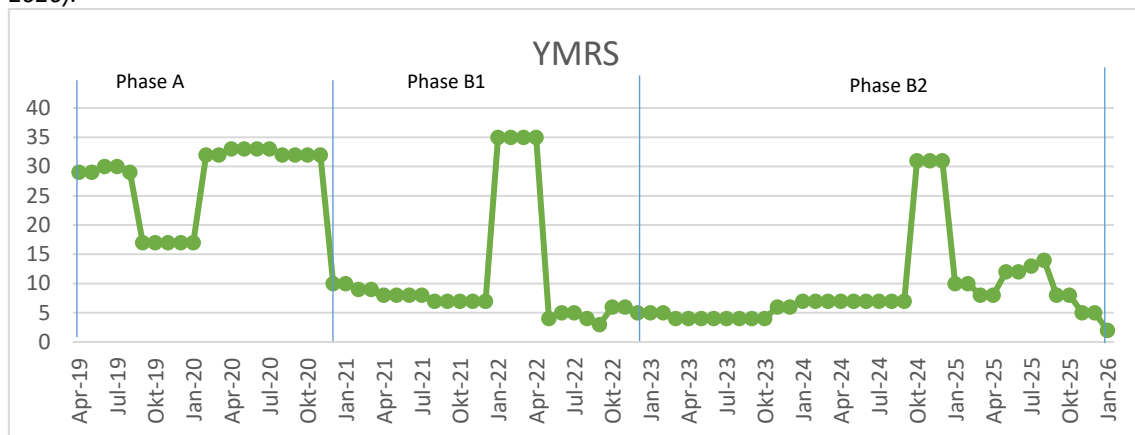
Provided below are graphs that illustrate the findings from the 82-month observation of participants' pathological and psychological functioning. Values for each month are displayed without any form of smoothing, transformation, or modification, and values for self-report data will also be presented as raw. Where each phase is representative of a clinically and behaviorally defined period of stability, demarcation is done without interference of the experimenter. Focus will be placed on SCED visual analysis guidelines of a single individual for the greatest changes in variability as well as in changes. Data points will be presented as raw monthly observations. As per the guidelines, no procedures for smoothing, aggregation, or moving average will be conducted. Vertical dashed lines represent defined 'Analytic' phases, which are labelled as phase A (unstable or baseline phase), phase B1 (partial stability phase), and phase B2 (stable phase). To comply with a single-case experimental design (SCED), a visual analysis of the data will be made. The data is used for analysis of the person data within, and complete the analysis without drawing a causal conclusion.

Figure 1

Longitudinal Time-Series of Depressive Symptoms (MDRS-22) Across Study Phases. Monthly time-series plot of Male Depression Risk Scale (MDRS-22) scores across the observation period.


Figure 2

Longitudinal Time-Series of Manic Symptoms (YMRS) Across Study Phases. Monthly time-series plot of Young Mania Rating Scale (YMRS) scores across the 82-month observation period (April 2019–January 2026).


Figure 3

Longitudinal Time-Series of Depression, Anxiety, and Stress. Monthly time-series plot of Depression Anxiety Stress Scale (DASS-42) total scores across the 82-month observation period (April 2019–January 2026).

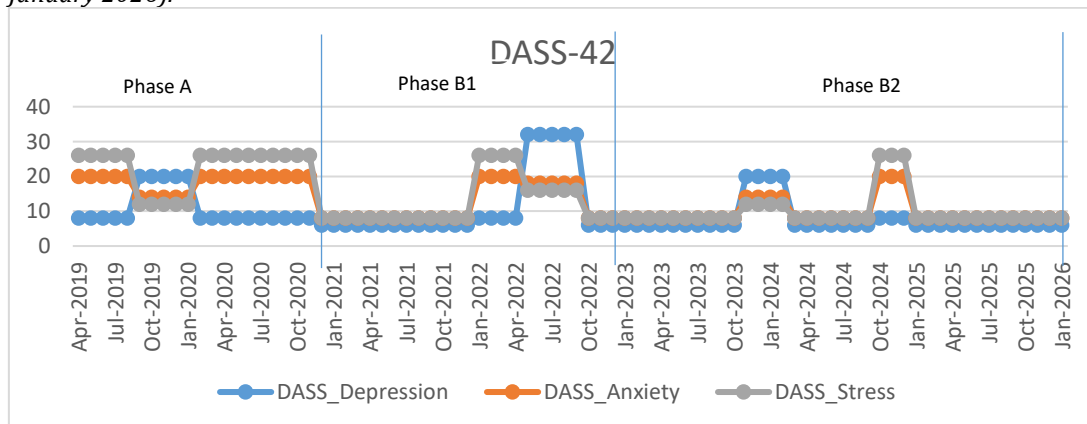


Figure 4

Longitudinal Time-Series of Cognitive Distortion. Monthly time-series plot of Cognitive Distortions Questionnaire (CD-Quest) scores across the 82-month observation period (April 2019–January 2026).

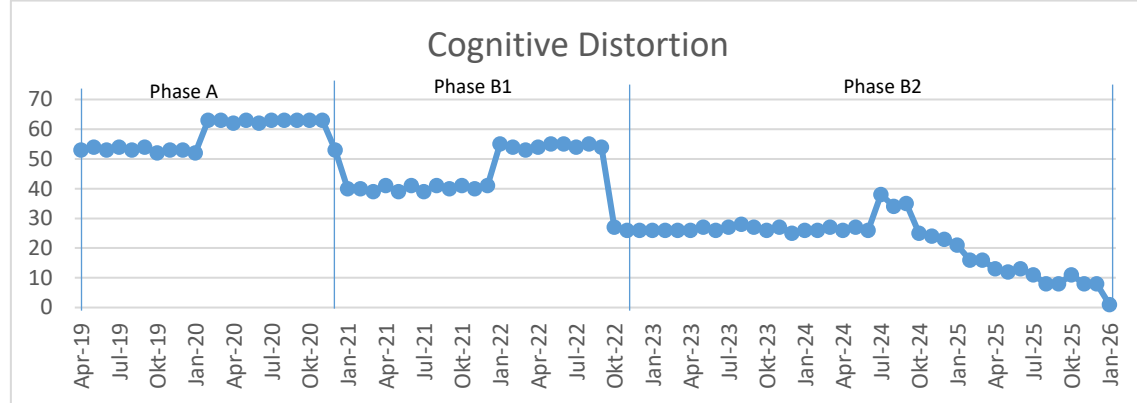


Figure 5

Longitudinal Time-Series of Executive Dysfunction (DEX). Monthly time-series plot of Dysexecutive Questionnaire (DEX) scores across the 82-month observation period (April 2019–January 2026).

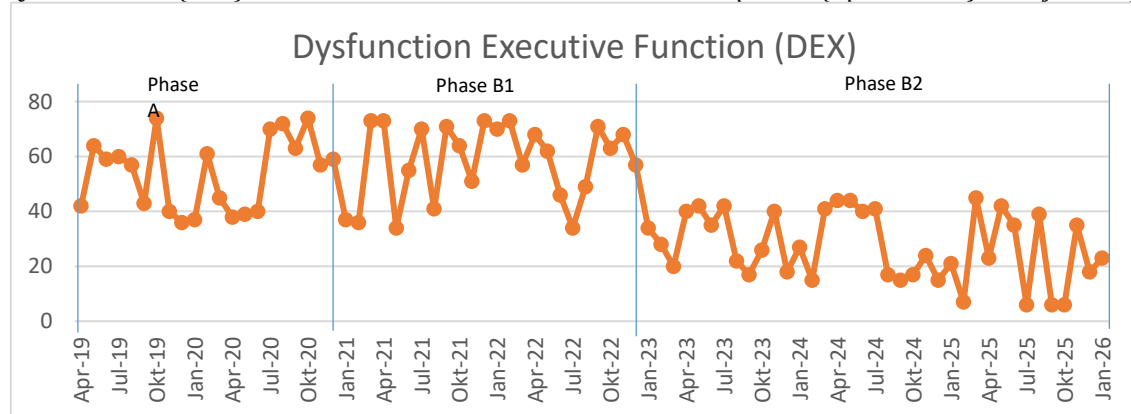


Figure 6

Longitudinal Time-Series of Self-Regulation Capacity Monthly time-series plot of Self-Regulation Scale scores across the 82-month observation period (April 2019–January 2026).

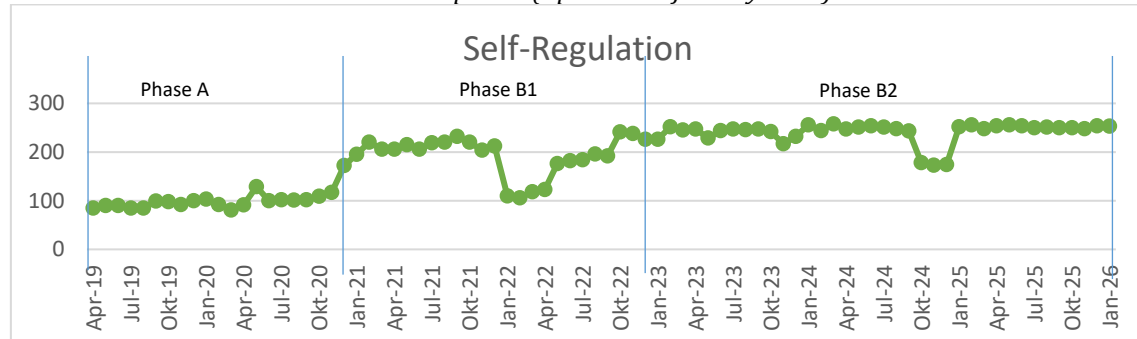
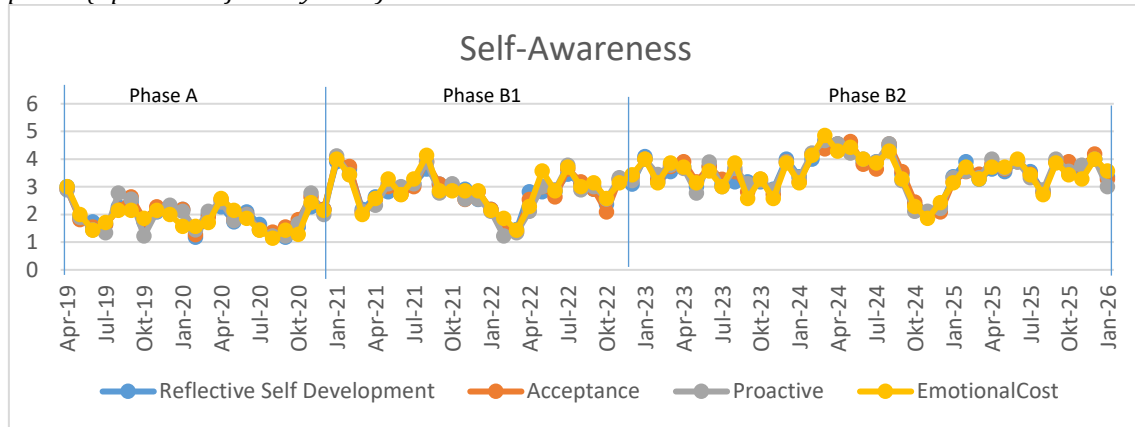
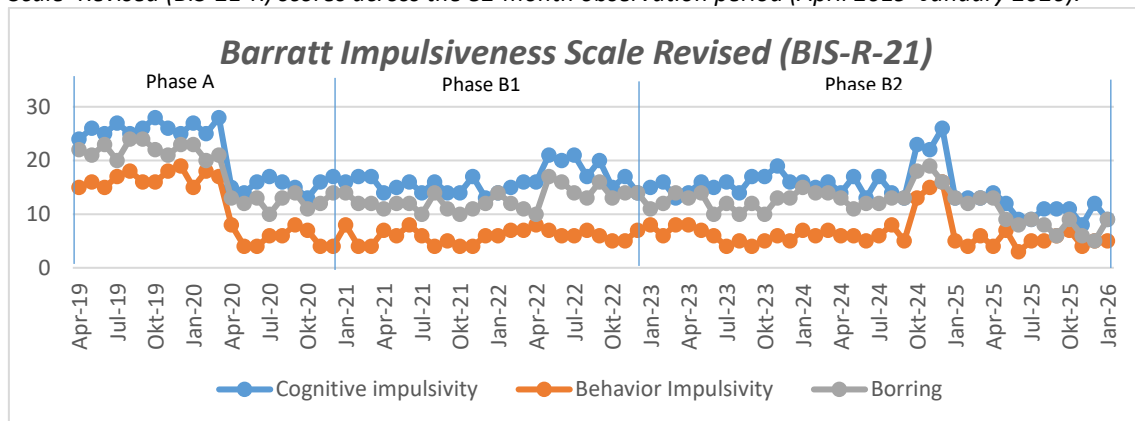


Figure 7

Longitudinal Time-Series of Self-Awareness (Self-Awareness Outcome Questionnaire). Monthly time-series plot of Self-Awareness Outcome Questionnaire (SAOQ) scores across the 82-month observation period (April 2019–January 2026).


Figure 8

Longitudinal Time-Series of Impulsiveness (BIS-21-R). Monthly time-series plot of Barratt Impulsiveness Scale–Revised (BIS-21-R) scores across the 82-month observation period (April 2019–January 2026).


Figure 9

Longitudinal Time-Series of Religious Practice Intensity. Monthly time-series plot of Religious Practice Intensity scores (daily ṣalāh consistency and Qurʻānic recitation frequency) across the 82-month observation period (April 2019–January 2026).

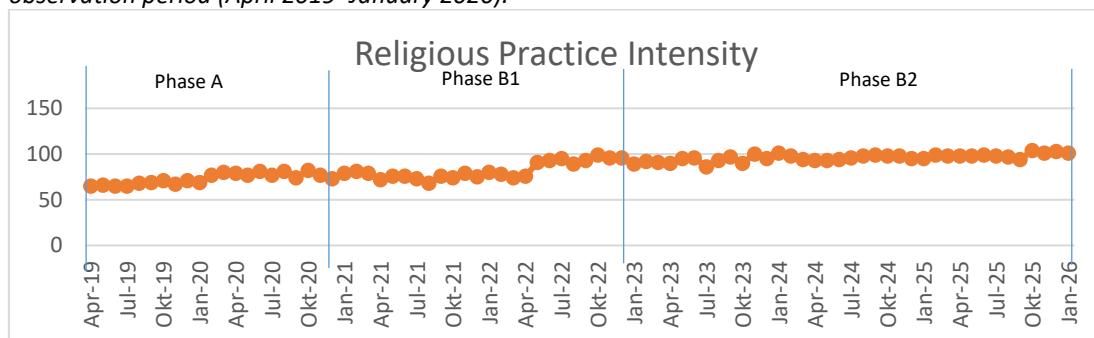
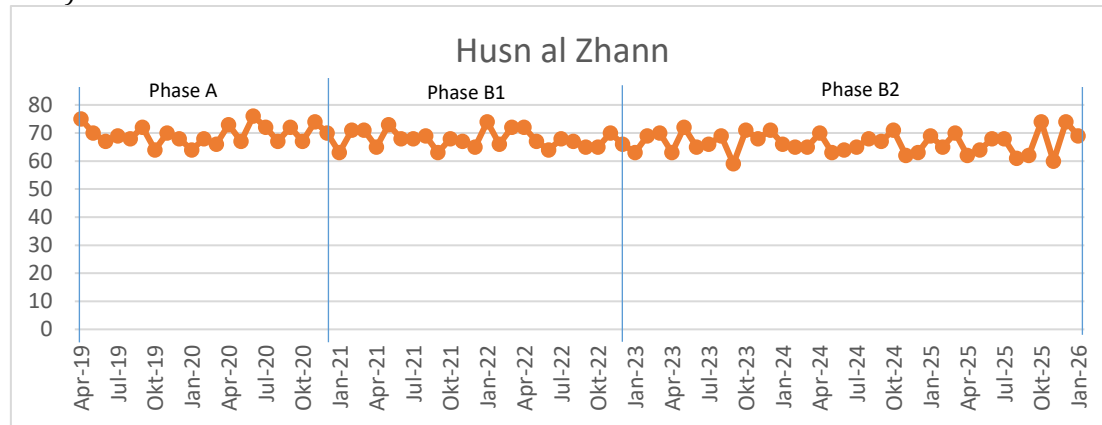


Figure 10

Longitudinal Time-Series of Husn al-Zhann (Cognitive-Spiritual Orientation). Monthly time-series plot of Husn al-Zhann Questionnaire scores across the 82-month observation period (April 2019–January 2026).



Trajectory of Husn Al-Zhann and Religious Practices

Husn Al-Zhann Scores Across Time

Husn al-Zhann scores showed a gradual upward trend across the seven-year observation period. During Phase A, scores fluctuated considerably, reflecting variability in cognitive-spiritual appraisal. In Phase B1, scores increased modestly while month-to-month variability became less pronounced. By Phase B2, Husn al-Zhann scores remained consistently high with minimal fluctuation, suggesting a stable positive cognitive-spiritual orientation over time.

Intensity of Islamic Religious Practices

Religious Practice Intensity also increased progressively across the study phases. During Phase A, daily prayer and Qur'anic recitation were performed inconsistently. Greater regularity emerged during Phase B1, although occasional interruptions were still observed. By Phase B2, both practices became highly consistent, indicating the establishment of stable religious routines throughout the observation period.

Temporal Alignment Between Spiritual Variables and Mood Stability

Visual inspection of the longitudinal time-series suggested that improvements in Husn al-Zhann and Religious Practice Intensity occurred alongside reductions in YMRS and MDRS-22 scores. These temporal patterns became particularly evident during Phase B2, when greater consistency in religious practices and cognitive-spiritual orientation coincided with lower symptom severity and reduced mood variability. Because of the observational single-case design, these findings should be interpreted as temporal associations rather than causal relationships.

Non-Overlap and Change Indices

To further evaluate changes in mood outcomes across phases, non-overlap analysis was conducted using the Percentage of Non-Overlapping Data (PND) method, with Phase A serving as the baseline reference. For the Young Mania Rating Scale (YMRS), PND analysis indicated that 100% of YMRS scores during Phase B2 fell below the highest baseline score recorded in Phase A, demonstrating complete non-overlap between the stabilized phase and baseline manic symptom levels. For the Male Depression Risk Scale-22 (MDRS-22), approximately 91.9% of scores during Phase B2 showed non-overlap with baseline values, indicating a substantial reduction in depressive symptom levels compared with the baseline phase.

Overall, these findings suggest a marked shift toward greater mood stability during the stabilized phase, characterized by lower symptom severity and reduced temporal variability relative to the initial observation period.

Table 1

Non-Overlap and Change Indices

Variable Category	Measure	Baseline (Phase A)	Pattern	Phase B2 Pattern	Quantitative Index
Primary Clinical Outcomes	YMRS	High variability, peak = 33		Low & stable	PND = 100%
	MDRS-22	Elevated, peak = 41		Reduced with minor fluctuation	PND = 91.9%
Secondary Psychological Outcomes	DASS-42	High distress		Reduced & stable	Trend ↓
Neuro-Cognitive Mediators	BIS-R-21	Elevated impulsivity		Lower impulsivity	Trend ↓
	DEX	Dysexecutive complaints		Improved functioning	Trend ↓
	CD-Quest	Frequent distortions		Reduced distortions	Trend ↓
Spiritual Practice Variables	Self-Regulation	Lower capacity		Higher & stable	Trend ↑
	Self-Awareness	Reactive awareness		Reflective & stable	Trend ↑
	Husn al-Zhann	Variable, lower quartiles		High & consistent	Trend ↑
	Religious Practice Intensity	Inconsistent		Sustained consistency	Trend ↑

Clinically Significant Periods

In addition to clinically significant time spans that were observed, the November 2024 period featured heightened activity, diminished sleep, increased impulsivity and aggression, and increased scores on the Young Mania Rating Scale. From late 2025 to January 2026, the respondent presented with emotionally stable and structured routines and lower scores on the Young Mania Rating Scale and the MDRS-22, which correlates to the observer's impulsivity reports. November 2023 to February 2024 was also observed to possess stress and temporary elevations in depressive symptoms, while the respondent's condition was overall stable.

Qualitative Triangulation

The qualitative data from the observational journal corroborated the quantitative trends during the phases. The earlier phases detailed more frequent emotional instability, impulsive actions, and varying levels of motivation. The latter phases emphasized more emotional stability, routine, and reflective awareness. The journal excerpts provided examples of month-to-month variability within phases, thus providing context to the quantitative variability rather than replacing the data.

Discussion

This seven-year longitudinal single-case study examined the temporal co-development of mood symptoms, neuropsychological self-regulation, cognitive-spiritual orientation (*Husn al-Zhann*), and Islamic religious practices in one individual with bipolar disorder. Across the observation period, manic and depressive symptoms gradually decreased in both severity and variability, while executive functioning, self-regulation, self-awareness, and religious practice consistency improved. These within-person changes were accompanied by increasing stability in *Husn al-Zhann*, suggesting that cognitive-spiritual processes may function as part of a broader self-regulatory system. Rather than demonstrating causal effects, the findings illustrate how psychological, neurocognitive, and spiritual processes may co-evolve over time in the natural course of bipolar disorder management. These findings highlight the value of intensive longitudinal observation for understanding dynamic within-person processes that are often obscured in conventional group-based studies (Andrade, 2018; Kihlstrom, 2021).

Husn Al-Zhann as a Regulatory Cognitive Framework

Across the seven-year observation period that greater stability and internalization of *husn al-zhann* are correlated with decreased mood variability and enhanced self-regulation and executive functions, in line with the conceptualization of *husn al-zhann* as faith-based meaning-focused reappraisal. This reappraisal conceptualization has already been explored in the research of Basit & Rehman (2025) and Nabil et al. (2019). From a cognitive perspective, the top-down interpretive filter function of *husn al-zhann* is designed for stress and ambiguity. In addition, rather than the classical CBT method of empirical disputation, *husn al-zhann* recontextualizes adversity using a moral-existential framework which is similar to some acceptance-based models of emotion regulation (Omais & Antônio dos Santos, 2026; Safira & Sabran, 2025). Time-series analysis suggested that higher *Husn al-Zhann* scores were associated with lower impulsivity, fewer cognitive distortions, and greater self-awareness. These findings are broadly consistent with previous research suggesting that positive cognitive-spiritual appraisal may reduce maladaptive rumination while strengthening adaptive emotional regulation and psychological resilience (Aral et al., 2023; Yesilyaprak et al., 2019). Although causal relationships cannot be inferred, the observed temporal patterns support the possibility that *Husn al-Zhann* functions as an important cognitive-spiritual component of self-regulation in bipolar disorder. The integration of structured religious activities within enhancing self-regulatory coherence (Hasim et al., 2023; Mohd et al., 2022) is plausible. Though this research has to be further corroborated, the findings describe some of the possible functions that the neuropsychological self-regulation system has.

Neuropsychological Interpretation (PFC–Amygdala Model)

Longitudinal studies support a fronto-limbic regulation model for stability of mood. Stabilization of mood episodes in bipolar disorder may be a result of a balance between the prefrontal executives and limbic reactive system. The neuropsychological framework relating affective instability and impulsivity to the imbalance of the prefrontal and the amygdala is documented by Sabbah et al. (2024), and Wang et al. (2023). The early stages had symptom fluctuations along with, impulsivity and cognitive distortions which are in line with a lack of sufficient top-down modulating control (Aral et al., 2023; Carneiro et al., 2025).

An improvement in self-regulation, together with a mood stability, was correlated with a more stable husn al-zhann, diminishment of cognitive distortion, and a drop in dysexecutive complaints, which is in line with the studies that meaning based reappraisal is sufficient to activate the prefrontal control networks (Basit & Rehman, 2025; Nabil et al., 2019). Husn al-zhann can be conceptualized as a cognitive regulator. It diminishes rumination and, attenuates limbic salience and, as a result, a better emotional control is achieved (Wagner-Skacel et al., 2020; Yesilyaprak et al., 2019). In combination with organized religious activities, it could increase the support of the balance between the executive and autonomic system (Hasim et al., 2023; Silabdi et al., 2021). During the early phases of this study, elevated mood symptoms were accompanied by greater impulsivity, cognitive distortions, and executive dysfunction, consistent with reduced regulatory control. Over time, improvements in self-regulation, executive functioning, and self-awareness occurred alongside increased stability in *Husn al-Zhann* and structured religious practices. Although the present study did not directly measure neural activity, these longitudinal behavioral patterns are compatible with theoretical models suggesting that meaning-focused cognitive reappraisal may strengthen executive control over emotional responses. Consequently, *Husn al-Zhann* may be understood as a culturally grounded cognitive-spiritual strategy that supports neuropsychological self-regulation rather than as a direct neurobiological mechanism.

Clinical Implications for Bipolar Management

The present findings have several implications for culturally sensitive bipolar disorder management. Although pharmacotherapy remains the cornerstone of treatment, long-term mood stability also depends on effective day-to-day self-regulation. Improvements in executive functioning, self-awareness, cognitive restructuring, and structured religious practices observed in this study suggest that cognitive-spiritual self-regulation may complement standard pharmacological treatment rather than replace it (Pfennig et al., 2017; Sabbah et al., 2024). Improvement of executive functioning, self-impulse control, awareness, and cognitive restructuring were concomitant with mood stabilization and supported theories positing executive and metacognitive regulation as core (primary) mechanisms (Aral et al., 2023; Wang et al., 2023). Basit & Rehman (2025) ; Nabil et al. (2019) describe Rather than being equivalent to cognitive behavioural therapy (CBT) or acceptance and commitment therapy (ACT), Husn al-Zhann may share conceptual similarities with cognitive restructuring and acceptance-based processes while remaining theoretically grounded within Islamic psychology. Prayer and recitation of the Qur'an are examples of structured techniques that may (in the behavioral view) help stabilize cycles and help stabilize attention (Hasim et al., 2023; Silabdi et al., 2021). In relation to methodology, the SCED and time series design made an ecologically sound step-wise, longitudinal, time-oriented intraindividual change approach focusing on process change without the averaging effects of group distortions (Andrade, 2018; Jusko et al., 2025; Krasny-Pacini & Evans, 2018). Integrative mediation was found to be consistent with contemporary single-case process models (Miočević et al., 2022). From a methodological perspective, the SCED time-series approach enabled detailed examination of within-person changes across an extended observation period. This design complements conventional group-based research by capturing individual trajectories that may otherwise be obscured by population averages. Nevertheless, the findings should be interpreted cautiously in light of the single-case design, reliance on self-report measures, and absence of a comparison group.

Limitations

Several limitations should be considered when interpreting the findings of this study. First, although repeated monthly assessments were conducted over a seven-year period, many variables relied on self-report measures, which may be influenced by recall bias, response tendencies, or changes in self-perception over time. To mitigate this risk, quantitative assessments were complemented by clinicians' observational notes and qualitative journal records; nevertheless, self-report bias cannot be completely eliminated. Second, this study employed a longitudinal single-case experimental design involving one participant without a comparison or control group. Consequently, observed temporal associations between *Husn al-Zhann*, Islamic religious practices, neuropsychological variables, and mood stability should not be interpreted as evidence of causal relationships. Other factors, including pharmacological treatment, psychosocial support, or life events, may also have contributed to the observed changes. Third, the findings have limited generalizability because they are derived from a single individual diagnosed with bipolar disorder within a specific cultural and religious context. The purpose of this study was to provide an in-depth understanding of within-person processes rather than to estimate population-level effects. Replication using multiple single-case studies, larger longitudinal cohorts, and diverse cultural settings is needed to determine the broader applicability of the proposed cognitive-spiritual self-regulation framework.

Conclusion

Across seven years of observation, sustained improvements in *Husn al-Zhann* and structured Islamic religious practices coincided with greater executive functioning, enhanced self-regulation, and reduced variability in manic and depressive symptoms. These findings support the view that cognitive-spiritual processes may contribute to long-term mood regulation as part of an integrated self-regulatory framework. Process oriented/self-regulation models remain relevant to managing bipolar disorder beyond episodic psychosis. While the integration of self-regulation within the dominant cognitive-spiritual culture of the individual is suggested to improve bipolar disorder management, further studies are required, particularly using multi-focus strategies and case studies. Accordingly, the present findings should be regarded as hypothesis-generating rather than confirmatory and provide a foundation for future longitudinal studies involving larger samples and multiple-case designs. Future research employing replicated single-case designs, multiple-baseline studies, and larger longitudinal cohorts will be essential to determine the robustness and generalizability of the proposed cognitive-spiritual self-regulation model.

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