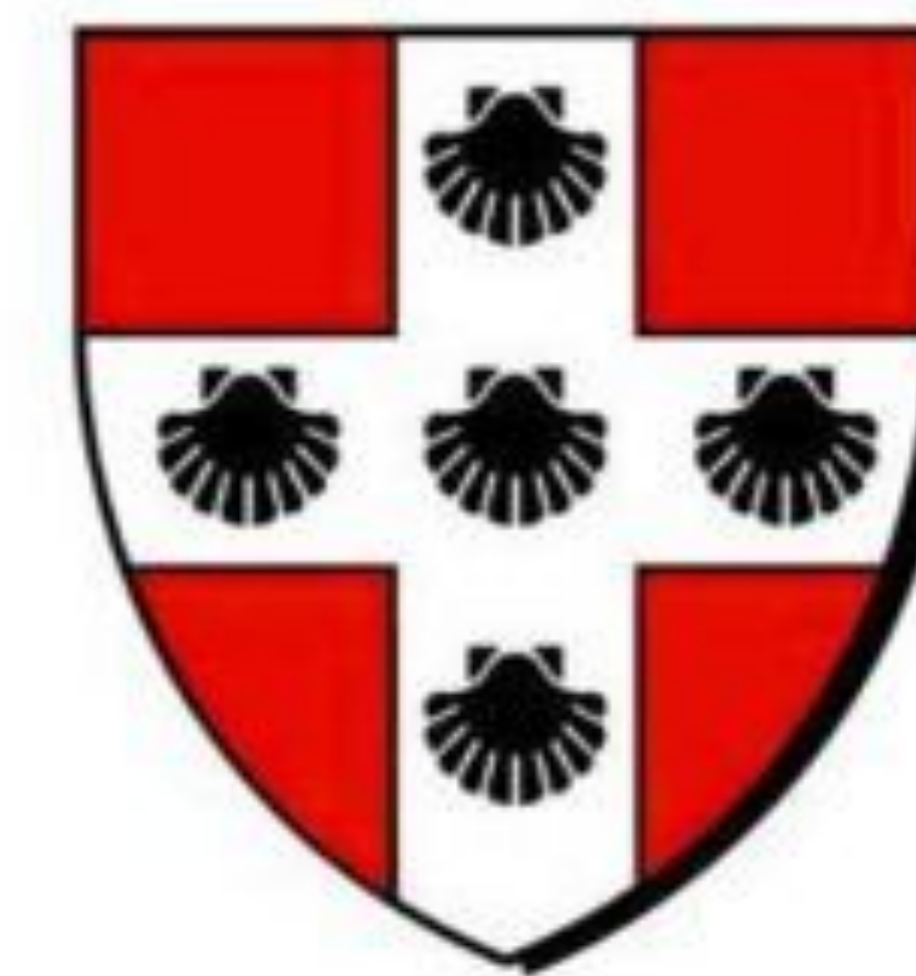


Cognitive Flexibility Matters?

Examining the Relationship Between Meaning in Life, Cognitive Flexibility, and Suicidal Ideation

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Introduction

- In 2023, 13.2 million U.S. adults seriously considered suicide¹. As the 11th leading cause of death, this underscores the urgent need to address suicidal ideation².
- Studies consistently demonstrate that having a stronger sense of meaning in life is associated with lower levels of suicidal ideation, such as among stressed college students³ and elderly individuals facing physical illnesses⁴.
- Cognitive flexibility enables adaptable thinking in challenging situations, crucially preventing entrenched, ineffective thought patterns. Lower baseline cognitive flexibility elevated the risk of future suicidal ideation⁵.
- Research exploring the impact of cognitive flexibility and meaning in life on suicidal ideation remains limited.
- This study aims to contribute further evidence regarding the relationship between suicidal ideation, meaning in life, and cognitive flexibility, using repeated measures analyzed through Hierarchical Linear Modeling.

Research Questions

- Does the association between meaning in life and suicidal ideation change over time?
- Does cognitive flexibility moderate the relationship between meaning in life and suicidal ideation within individuals?

Methods

Sample

- This sample was drawn from a larger study where 91 patients and their partners were recruited from three inpatient psychiatric units at a community hospital in the Mountain West. Only patients' data are included in this analysis (n=91).
- Patients are active duty military members (92.3%) or veterans (7.7%).
- Sex: 60 (65.9%) male patients.
- History: 93.4% of patients had a history of suicidal ideation; 47.3% had a history of suicide attempts.

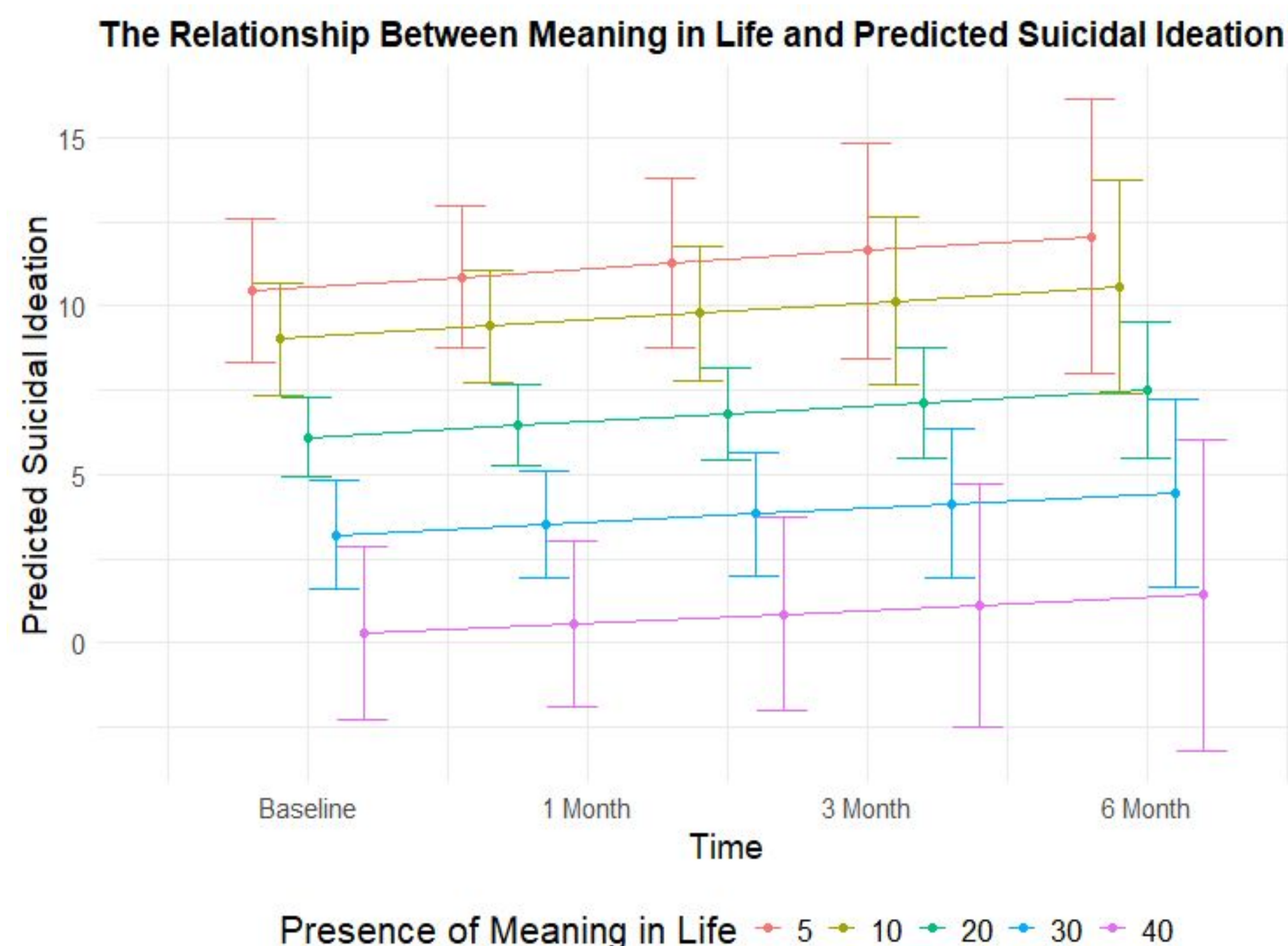
Measures

- Suicidal ideation (SI) was assessed using the total score from the Scale for Suicide Ideation (SSI; Weissman, 1979).
- Meaning in life (MinL) was assessed using the total score derived from the Presence of Meaning Subscale of the Meaning in Life Questionnaire (MLQ; Steger, Frazier, Oishi, & Kaler, 2006).
- Cognitive flexibility (CF) was assessed using the Cognitive Flexibility Index (CFI; Dennis & Vander Wal, 2010).
- All variables were assessed at baseline, 1, 3, and 6 months post-discharge.

References: 1. Center for Behavioral Health Statistics and Quality et al. (2023) 2. American Foundation for Suicide Prevention (2022) 3. Mingming et al. (2024) 4. Lutzman & Sommerfeld (2021) 5. Miranda et al. (2013)

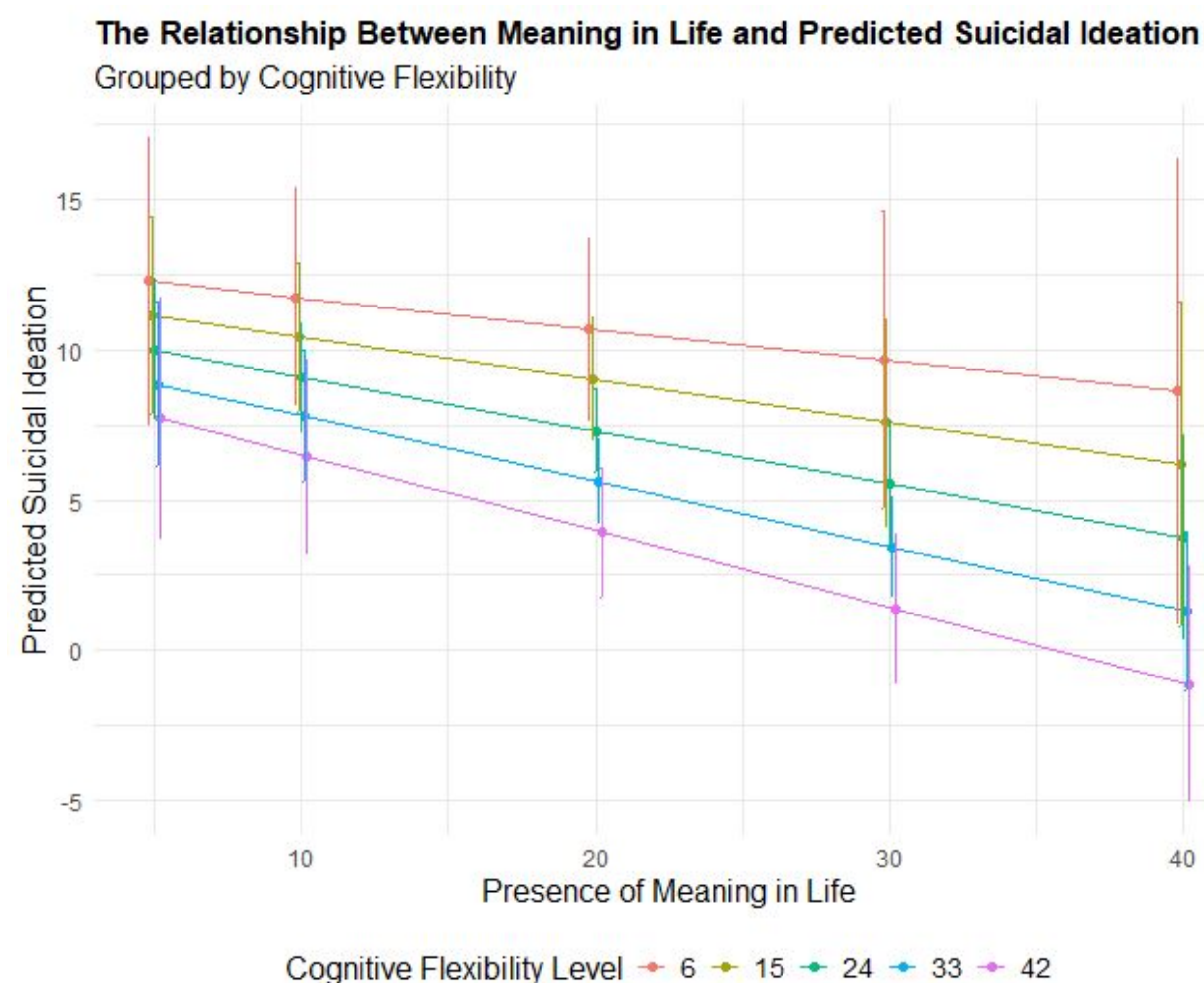
Results

- Model 1:** $SI \sim 1 + Time + MinL + Time*MinL + (1+Time | ID)$



- Intercept:** significant (Estimate = 11.93, $SE = 1.33$, $t(140.97) = 8.93$, $p < .001$)
- Time:** not significant (Estimate = 0.56, $SE = 0.88$, $t(72.20) = 0.63$, $p = .53$).
- MinL:** significant negative effect (Estimate = -0.29, $SE = 0.059$, $t(144.78) = -4.97$, $p < .001$), indicating greater presence of meaning in life is associated with lower levels of suicidal ideation.
- Time*MinL:** not significant (Estimate = -0.0044, $SE = 0.039$, $t(74.58) = -0.11$, $p = .91$), suggesting the relationship between MinL and SI does not significantly change over time.

- Model 2:** $SI \sim 1 + Time + MinL + CF + Time*MinL + Time*CF + MinL*CF + (1+Time | ID)$



- Intercept:** significant (Estimate = 10.86, $SE = 3.86$, $t(172.51) = 2.81$, $p = .006$).
- Time:** significant positive effect (Estimate = 2.35, $SE = 1.07$, $t(60.76) = 2.20$, $p = .032$).
- MinL:** not significant (Estimate = -0.15, $SE = 0.20$, $t(170.85) = -0.73$, $p = .46$).
- CF:** not significant (Estimate = 0.023, $SE = 0.12$, $t(175.93) = 0.18$, $p = .85$).
- Time*MinL:** not significant (Estimate = 0.060, $SE = 0.043$, $t(81.62) = 1.42$, $p = .16$).
- Time*CF:** significant negative effect (Estimate = -0.12, $SE = 0.040$, $t(73.32) = -2.94$, $p = .004$).
- MinL*CF:** not significant (Estimate = -0.0041, $SE = 0.0061$, $t(180.21) = -0.67$, $p = .50$).

Discussion

- This study used Hierarchical Linear Modeling (HLM) with repeated measures to provide additional evidence on the relationship between suicidal ideation and meaning in life. It is also the first to examine the moderating role of cognitive flexibility in this relationship.
- Model 1** suggests that meaning in life consistently serves as a significant protective factor against suicidal ideation over time, aligning with previous studies^{3,4}. **Model 2** indicates that cognitive flexibility does not moderate this relationship. Lower meaning in life is linked to higher suicidal ideation, regardless of cognitive flexibility. This may be due to the small sample size and high variability, as suggested by overlapping confidence intervals. Future research with a larger sample size is needed to clarify the role of cognitive flexibility.
- Clinically, these findings suggest that interventions aimed at enhancing meaning in life might be universally effective in reducing suicidal ideation, regardless of cognitive flexibility. Clinicians could focus on therapeutic approaches such as meaning-centered therapy, logotherapy, or existential therapy to help individuals find or restore meaning in their lives. Although cognitive flexibility did not statistically moderate the relationship, the visualization suggests it could be a potential therapeutic target that helps address suicidal ideation, warranting further research.