Reducing depressive symptoms through AI-guided narrative self-films: Results from a randomized controlled trial

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The Challenge: A Global Rise in Youth Depression

- Depression is a leading cause of disability worldwide, with the greatest burden on young adults.

- Prevalence among 18-25 year-olds is high and rising, straining traditional mental health services.

- Young people are increasingly turning to digital self-help tools, including generative AI.

- However, there is a critical need for theory-guided, evidence-based AI interventions for mental health.

Theoretical Framework: Narrative Identity & Cultural Context

Narrative Identity Theory

- People form a coherent sense of self by integrating past, present, and future experiences into a life story.

- Coherent and redemptive narratives are associated with higher hope and lower depressive symptoms.

Key Psychological Mechanisms

- **Hope:** Agency and pathways to goals.

- **Narrative Coherence:** Thematically integrated and causally linked life stories.

- **Future Self-Continuity:** Felt connection between present and future selves.

Cultural Adaptation

- Most narrative interventions are developed in Western, individualistic contexts.

- In collectivist cultures like China, life stories often emphasize communal harmony and family roles, requiring culturally responsive adaptations.

The Intervention: A 5-Day AI-Assisted "Self-Film" Program

01   **Days 1-3: Creating the Chapters**

Participants create one short AI-generated video per day to represent their past, present, and imagined future selves.

02   **Days 4-5: Compiling the Story**

Participants refine their videos and compile them into a final, personalized "self-film".

03   **Final Reflection**

Participants write a guided reflection on how their personal story evolved through the process.

Study Design: A 3x2 Factorial Randomized Controlled Trial

- **Participants:** 181 Chinese undergraduates with mild-to-moderate depressive symptoms.

- **Design:** Participants were randomly assigned to one of six conditions.

- **Factor 1: Value Framing**- Independent (personal autonomy)

- Interdependent (social connection)

- Neutral Control

- **Factor 2: Narrative Arc**- Ideal-Only (focus on positive aspirations)

- Conflict-Resolution (narrate overcoming a challenge)

- **Hypothesis:** The Interdependent / Conflict-Resolution condition would yield the greatest improvements.

Results: Descriptive Statistics

- This table shows the mean (M) and standard deviation (SD) for key outcomes before and after the intervention across all six experimental conditions.

Condition	n	PHQ-9 (Pre)	PHQ-9 (Post)	Hope (Pre)	Hope (Post)	Continuity (Pre)	Continuity (Post)	Narrative Coherence (Post)
Independent / Ideal-only	29	11.1 (2.5)	10.5 (2.7)	27.8 (4.4)	27.6 (3.9)	4.2 (1.3)	4.5 (1.3)	5.1 (1.5)
Independent / Conflict resolution	33	9.2 (2.3)	8.2 (2.5)	26.4 (4.3)	27.3 (4.0)	4.1 (1.4)	5.0 (1.2)	6.0 (1.5)
Interdependent / Ideal-only	28	10.5 (2.4)	9.9 (2.6)	26.2 (4.1)	26.4 (4.4)	4.0 (1.2)	4.3 (1.3)	5.3 (1.5)
Interdependent / Conflict resolution	30	11.3 (2.7)	10.0 (2.6)	27.0 (3.6)	28.0 (4.4)	4.0 (1.5)	5.0 (1.3)	6.4 (1.4)
Control / Ideal only	29	8.7 (2.2)	8.5 (2.3)	27.0 (3.8)	26.8 (4.5)	4.2 (1.3)	4.4 (1.6)	5.0 (1.0)
Control / Conflict resolution	31	10.3 (2.5)	9.5 (2.4)	26.5 (3.8)	27.0 (4.1)	3.9 (1.2)	4.6 (1.5)	5.7 (1.6)

Results: Statistical Analysis (ANOVA)

- The conflict-resolution narrative structure significantly reduced depressive symptoms and increased hope and narrative coherence.

- A significant three-way interaction for depression (Time × Framing × Structure) highlights the superior effect of the interdependent/conflict-resolution condition.

Outcome Variable	Effect	F(df)	p	Partial η²
Depression (PHQ-9)	Time	15.72 (1, 180)	< .001	.08
	Value Framing	2.03 (2, 178)	.134	.02
	Narrative Structure	5.31 (1, 180)	.023	.03
	Time × Framing × Structure	3.92 (2, 178)	.021	.04
Hope	Narrative Structure	4.85 (1, 180)	.029	.03
Narrative Coherence	Narrative Structure	9.84 (1, 180)	.001	.05
	Value Framing	3.92 (2, 178)	.021	.04
	Framing × Structure	4.11 (2, 178)	.018	.04
Self-Continuity	Time	9.84 (1, 180)	.002	.05
	Time × Framing × Structure	3.55 (2, 180)	.029	.03

Qualitative Themes from Participant Reflections

Temporal Integration (61%)

- Participants reported a deepened ability to connect past experiences with their present identity and future goals, making their life story feel more 'connected' and 'directional'.

Emotional Processing (54%)

- Many described the intervention as emotionally cathartic, facilitating meaning-making and perspective-taking on difficult life events.

Relational Identity (43%)

- Especially in the interdependent condition, participants framed goals in relation to family and community, reflecting collectivist cultural values.

Key Findings and Implications

- **Conflict is Key:** Narrating the resolution of personal challenges was more effective at reducing depressive symptoms than focusing only on ideal futures.

- **Culture Matters:** Framing stories around interdependent values (family, community) amplified the benefits, particularly for narrative coherence.

- **Combined Effect:** The interdependent/conflict-resolution condition produced the strongest improvements across psychological well-being metrics.

- **Implication:** This study provides preliminary evidence for brief, culturally-attuned, AI-supported storytelling as a scalable digital mental health intervention.

Thank You

- Generative AI, when guided by psychological theory and cultural sensitivity, holds promise for supporting youth mental health.

- Future research should continue to explore mechanisms of change and address the ethical considerations of deploying AI in emotionally sensitive contexts.