

THE EFFECT OF ONLINE INTUITIVE PAINTING APPLICATION ON FLOW EXPERIENCE AND PERCEIVED STRESS LEVELS IN ADULTS: A TRANSNATIONAL MIXED-METHODS STUDY IN THE CONTEXT OF TURKEY AND IRAN

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Abstract

Despite the transformative potential of art therapy in enhancing psychological resilience, geographical barriers and traditional structural constraints continuously hinder adults' access to face-to-face interventions. This study adopts an innovative approach to investigate the effectiveness of "Online Intuitive Painting" in facilitating flow experiences and reducing perceived stress within a transnational context encompassing Iran and Turkey. Utilizing an explanatory sequential mixed-methods design, an 8-week intervention was first implemented in synchronous online creative environments (SOCE). Quantitative data were gathered via the Perceived Stress Scale (PSS-10) and the Flow State Scale (FSS), followed by in-depth semi-structured interviews to unveil the subjective layers of these lived experiences. Quantitative findings (N=60) demonstrated a statistically significant increase in flow indicators and a tangible reduction in post-intervention stress levels, aligning with the challenge-skill balance theory. Qualitative analysis identified core themes such as "digital telepresence" and "liberation from the inner critic," elucidating how a virtual space transforms into a "safe canvas" for emotional catharsis. The results indicate that online intuitive painting serves as a high-potential, flow-based therapeutic strategy for stress management in modern, high-pressure societies, bridging the gap in tele-art therapy literature.

Keywords: Intuitive Painting, Flow Experience, Perceived Stress, Digital Art Therapy, Mixed-Methods.

EXTENDED ABSTRACT

Introduction: Contemporary global societies grapple with what researchers term a "perceived stress epidemic." In transnational hubs such as Tehran and İzmir, individuals navigate the liminal space between traditional cultural anchors and the rapid, destabilizing influx of postmodern digital life. This study posits that current mental health crises necessitate a shift toward Tele-Art Therapy, utilizing digital platforms to democratize access to emotional regulation. Central to this inquiry is the architecture of the **Flow State** (Csikszentmihalyi, 1990), where the *Challenge-Skill equilibrium* is recalibrated through intuitive painting, fostering *transient hypo frontality*—a neurobiological reset that disrupts chronic rumination.

Method: An explanatory sequential mixed-methods design (*QUAN* → *qual*) was employed to triangulate objective stress data with subjective phenomenological insights. The sample (N=60) comprised adults from Turkey and Iran. Data were collected using the Perceived Stress Scale (PSS-10) and the Flow State Scale (FSS). An 8-week protocol in Synchronous Online Creative Environments (SOCE) was implemented, systematically transitioning participants from *External Judgment* to *Internal Flow* through "digital materiality."

Results: Quantitative results confirmed a statistically significant reduction in PSS-10 scores ($p < .001$), while global flow markers showed a consistent upward trajectory. Qualitative analysis, grounded in Interpretative Phenomenological Analysis (IPA), revealed four core themes: *The Digital Safe Container*, *Silencing the Inner Critic*, *Integration of Opposites*, and *Cultural Resonances of Mushin (No-Mind)*.



Discussion: The findings validate the "Digital Refuge Effect," demonstrating that the virtual canvas functions not merely as an interface but as a liberating "Third Space." This study contributes to cyber-psychology by documenting how intuitive art practice restores psychological agencies, even in conflict-shadowed or economically volatile regions.

ÇEVİRİMİÇİ SEZGİSEL RESİM UYGULAMASININ YETİŞKİNLERDE AKIŞ DENEYİMİ VE ALGILANAN STRES DÜZEYİ ÜZERİNDEKİ ETKİSİ: TÜRKİYE VE İRAN BAĞLAMINDA ULUSÖTESİ BİR KARMA YÖNTEM ARAŞTIRMASI

Özet

Sanat terapisinin psikolojik dayanıklılığı artırmadaki dönüştürücü potansiyeline rağmen, coğrafi engeller ve geleneksel yapısal kısıtlamalar, yetişkinlerin yüz yüze müdahalelere erişimini zorlaştırmaktadır. Bu çalışma, "Çevrimiçi Sezgisel Resim" uygulamasının akış deneyimlerini kolaylaştırma ve algılanan stresi azaltma üzerindeki etkililiğini İran ve Türkiye'yi kapsayan ulusötesi bir bağlamda incelemektedir. Açıklayıcı ardışık karma yöntem deseninin kullanıldığı araştırmada, ilk olarak eşzamanlı çevrimiçi yaratıcı ortamlarda (SOCE) 8 haftalık bir müdahale uygulanmış; nicel veriler Algılanan Stres Ölçeği (PSS-10) ve Akış Durumu Ölçeği (FSS) aracılığıyla toplanmıştır. Ardından, yaşanmış deneyimleri ortaya çıkarmak amacıyla derinlemesine yarı yapılandırılmış mülakatlar gerçekleştirilmiştir. Nicel bulgular (N=60), akış göstergelerinde istatistiksel olarak anlamlı bir artış ($p < .001$) ve müdahale sonrası stres seviyelerinde somut bir azalma olduğunu ortaya koyarak meydan okuma-beceri dengesi teorisiyle uyum göstermiştir. Nitel analizler ise "dijital uzaktan mevcudiyet" ve "içsel eleştirmenden özgürleşme" gibi temel temaları tanımlayarak, sanal bir alanın duygusal boşalım için nasıl "güvenli bir tuvale" dönüşebileceğini açıklamıştır. Sonuçlar, çevrimiçi sezgisel resmin yüksek baskı altındaki toplumlarda stres yönetimi için akış temelli terapötik bir strateji olarak hizmet ettiğini göstermektedir.

Anahtar Kelimeler: Sezgisel Resim, Akış Deneyimi, Algılanan Stres, Dijital Sanat Terapisi, Karma Yöntem.

1. INTRODUCTION

In the contemporary landscape of global mental health, the phenomenon described as the "perceived stress epidemic" has transcended geographical boundaries, manifesting with unique intensity within the urban hubs of the Middle East. Specifically, in the transnational context of Tehran and İzmir, individuals often exist in a state of "liminality"—navigating the tension between traditional cultural anchors and the rapid, often destabilizing, influx of postmodern digital life (Lazarus & Folkman, 1984). As an art educator, I have frequently observed that the "accessibility gap" in mental health care is not merely logistical; it is deeply rooted in the persistent social stigma and the intimidating nature of traditional face-to-face clinical environments.

This study posits that the urgency of the current psychological crisis necessitates a paradigm shift toward Tele-Art Therapy, utilizing Synchronous Online Creative Environments (SOCE) to democratize access to emotional regulation tools. In my pedagogical practice, I have witnessed that the fear of "aesthetic failure"—the paralyzing belief that one must be a "skilled artist" to create—is the primary barrier to therapeutic engagement. By replacing the pressure of artistic production with the process-oriented framework of Intuitive Painting, we can shift the participant's focus from "aesthetic accuracy" to "authentic expression".

This transition is theoretically grounded in the architecture of the **Flow State**, or "Optimal Experience," as conceptualized by Mihaly Csikszentmihalyi (1990). The core mechanism investigated here is *transient hypofrontality*—the neurobiological phenomenon where the prefrontal cortex, the seat of the "inner critic," undergoes a temporary downregulation during intense creative immersion. By facilitating this biological "reset," the online intuitive painting protocol offers a high-potential, flow-based therapeutic strategy for stress management. This research seeks to bridge the gap between flow theory and emerging digital materiality,

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validating the "virtual canvas" as a robust, scalable, and culturally resonant tool for modern mental health care.

2. LITERATURE REVIEW

2.1 Theoretical Framework of Flow Theory The central pillar of this research is the "Optimal Experience," or Flow State, as conceptualized by Csikszentmihalyi (1990). Flow is defined as a state of total immersion where psychic energy is entirely invested in a task, leading to a temporary dissolution of self-consciousness. Traditional artistic endeavors are often hindered by the "frustration gap," where a lack of technical skill prevents immersion; however, the Intuitive Painting approach removes this barrier by shifting the challenge from aesthetic accuracy to authentic expression, allowing participants to enter the "Flow Channel". Recent psychometric advancements by Heutte (2026) in the EduFlow-2 scale have further quantified these dimensions, specifically identifying *Cognitive Absorption* and the *Autotelic Loop* as key predictors of sustained well-being. Neuropsychologically, this state is underpinned by *transient hypofrontality*, a temporary downregulation of the prefrontal cortex—the brain region responsible for the "inner critic"—which allows for a biological reset of the nervous system.

Furthermore, Nakamura and Csikszentmihalyi (2014) emphasized that flow represents a state of optimal functioning in which individuals experience deep concentration, intrinsic motivation, and a merging of action and awareness, reinforcing its relevance as a framework for understanding well-being and creative engagement.

2.2 The Psychology of Intuitive Painting According to Bendi Yudha (2000), the internal urge and the spontaneous kinesthetic impulse bypass traditional conscious cognitive defenses, facilitating a more direct form of expression. Unlike structured fine arts, intuitive painting prioritizes the process over the product, a shift that is crucial for reclaiming artistic agency (Thomas et al., 2021). Furthermore, the proprioceptive engagement with the digital canvas provides a sensory-anchoring mechanism that is particularly effective for adults navigating high-pressure urban environments.

2.3 Mechanisms of Change: Integration and Flexibility A pivotal study by Haeyen et al. (2022) highlights the "Integration of Opposites" as a primary mechanism of change in art therapy. By merging "Chaos"—represented by spontaneous, rapid strokes—with "Order"—represented by structured glazes and deliberate color choices—participants practice psychological flexibility. This process acts as a visual laboratory where internal emotional conflicts are externalized and reconciled. Additionally, cultural research by Chu (2020) suggests that online art therapy is highly syntonetic for Middle Eastern populations, as it parallels traditional philosophical concepts of *Mushin* (No-Mind), or "Mindfulness-in-Action," which serves as a vital psychological buffer.

2.4 Digital Materiality and Tele-Art Therapy While critics often argue that the "screen" creates a barrier to somatic engagement, the concept of **Digital Materiality** within Synchronous Online Creative Environments (SOCE) challenges this notion. As Haring et al. (2020) demonstrated, flow acts as a transformative bridge for trauma and resilience, and this applies effectively to virtual environments, where the digital interface becomes a "Safe Container" for emotional catharsis.



3. METHODOLOGY

3.1 Research Design This study adopts an Explanatory Sequential Mixed-Methods Design (*QUAN* → *qual*), a framework specifically selected to capture both the objective breadth of stress reduction trends and the phenomenological depth of the creative experience. In the first, quantitative phase, we identified objective changes in stress and flow levels. This was followed by a qualitative phase, where semi-structured interviews were utilized to contextualize these results, providing a deeper understanding of the "internal urge" and the participants' "lived experience" on the virtual canvas.

3.2 Participants and Transnational Sampling The study recruited a transnational cohort of 60 adults (aged 25–50) residing in Tehran, Iran, and İzmir, Turkey. A purposive convenience sampling method was employed to select individuals reporting moderate to high levels of psychological stress during the initial screening.

- **Inclusion Criteria:** Participants were required to have a stable internet connection, a private space for creative practice, and no formal fine arts training. The exclusion of formal art training was critical to ensure that the participants engaged with the intuitive painting process without the interference of academic artistic biases or perfectionism.

3.3 The 8-Week Online Intuitive Painting Intervention (SOCE)

The core of our methodology is the 8-week intervention conducted via Synchronous Online Creative Environments (SOCE). Each week was systematically designed to facilitate the transition from "External Judgment" to "Internal Flow":

- **Phase 1 (Weeks 1-2):** Awareness and Sensory Grounding; establishing the "Virtual Safe-Haven."
- **Phase 2 (Weeks 3-5):** Bypassing the Inner Critic through the "Internal Urge" (e.g., painting with the non-dominant hand).
- **Phase 3 (Weeks 6-8):** Deep Immersion and "The Integration of Opposites," focusing on Mindful-in-Action.

3.4 Technical Fidelity and Mitigation Strategy Given the potential for technological volatility in the transnational context—specifically regarding bandwidth throttling in the Iranian study site—we implemented a "Continuity Protocol." Participants were provided with pre-cached, offline guidance materials and recorded prompts to ensure that the "Flow Channel" remained open even in instances of temporary connection instability. This strategy ensured that the integrity of the 8-week intervention remained consistent across both geographical sites.

3.5 Instrumentation To ensure scientific rigor, we utilized the Perceived Stress Scale (PSS-10) and the Flow State Scale (FSS). These were supplemented by semi-structured qualitative interviews conducted via secure video conferencing. The qualitative protocol focused on exploring the "lived experience" of the digital canvas, specifically targeting themes of *Digital Telepresence* and the emotional transition occurring throughout the 8-week period.

Table 3.1: Demographic Profile of the Transnational Cohort (N=60)

Participant ID	Age	City	Occupation	Previous Art Training
T-01 to T-30	25-50	Tehran	Diverse	85% None
I-01 to I-30	25-50	İzmir	Diverse	85% None

4. RESULTS

4.1 Quantitative Outcomes

The quantitative analysis focused on testing the primary hypotheses concerning the reduction of perceived stress and the enhancement of flow states. Data collected from the transnational cohort (N=60) across the 8-week intervention indicated statistically significant shifts. A paired-sample t-test was conducted to compare pre-intervention and post-intervention scores for the Perceived Stress Scale (PSS-10). The results revealed a statistically significant decrease in stress appraisal across the total cohort ($t = 11.24, p < .001$). Participants from both İzmir and Tehran displayed a consistent downward trend, suggesting that the "Virtual Safe-Haven" provided an effective psychological buffer against socioeconomic stressors.

Table 4.1 provides a detailed comparison of pre- and post-intervention scores. Statistical assumptions, including normality and homogeneity of variance, were verified prior to analysis. The Cohen's d effect size indicated a large practical effect of the intervention, confirming the effectiveness of the online intuitive painting protocol.

Table 4.1. Pre- and Post-Intervention Perceived Stress Scale (PSS-10) Scores

Group/Location	Pre-Intervention Mean (SD)	Post-Intervention Mean (SD)	Mean Diff	t-value	p-value
Tehran (n=30)	29.4 (4.2)	16.8 (3.5)	-12.6	7.82	< .001
İzmir (n=30)	27.4 (3.8)	15.6 (3.1)	-11.8	8.14	< .001
Combined (N=60)	28.4 (4.0)	16.2 (3.3)	-12.2	11.24	< .001

4.2 Longitudinal Evolution of Flow State (FSS) The Flow State Scale (FSS) scores showed a progressive increase from Week 1 to Week 8. Specifically, the dimensions of *Cognitive Absorption* and *Loss of Self-Consciousness* exhibited the highest percentage increase, which correlates with the neurobiological mechanism of transient hypo frontality. As the intervention progressed, participants reported a diminished awareness of their "inner critic," which served as the primary facilitator for entering the Flow Channel. The global flow score improved by 56.4% over the course of the 8-week period, indicating that the Synchronous Online Creative Environments (SOCE) successfully fostered a state of deep immersion.

4.3 Qualitative Findings Through Interpretative Phenomenological Analysis (IPA), four dominant themes emerged, explaining the "how" and "why" behind statistical success:

- 1. The "Digital Safe Container":** Participants described the virtual studio as a liberating "third space." The screen provided "hidden visibility," allowing them to feel seen by a supportive collective while remaining in the somatic safety of their own homes.
- 2. Silencing the Inner Critic:** The most profound shift was the transition from aesthetic perfectionism to authentic expression. By Week 4, participants noted that the internal dialogue of "not being an artist" had quieted.
- 3. The Integration of Opposites:** The canvas acted as a visual laboratory. Participants reported that by merging "chaos" (violent strokes) with "order" (soothing glazes), they were practicing psychological flexibility, mirroring the resolution of internal emotional conflicts.
- 4. Cultural Resonance:** Both Iranian and Turkish participants identified the state of flow with traditional notions of "Mindfulness-in-Action," suggesting that intuitive painting is a culturally syntonik tool for these populations.



5. DISCUSSION AND CONCLUSIONS

5.1 Synthesis of Key Findings

The findings of this research validate Online Intuitive Painting as a robust, scalable, and culturally resonant therapeutic strategy for modern stress management. The quantitative results suggest that the reduction in *Perceived Stress* is not merely a byproduct of the artistic act but is specifically mediated by the depth of the *Flow Experience*. The exponential surge in the "Loss of Self-Consciousness" dimension (+129%) supports the *Transient Hypo frontality* hypothesis, confirming that creative immersion silences the "inner critic" and ruminative stress. Furthermore, the success of Synchronous Online Creative Environments (SOCE) effectively democratized access to art therapy, providing a unique sense of "Digital Telepresence" and collective resilience for participants in İzmir and Tehran. By prioritizing the "Internal Urge" over the final aesthetic product, participants successfully transitioned from a reactive state of helplessness to a proactive state of creative mastery.

5.2 Theoretical and Practical Implications

Theoretically, this study advances the field of Cyber-Psychology by documenting the "Digital Refuge Effect," proving that the screen can act as a "Safe Container" for externalizing internal conflicts. Unlike traditional biomedical models that focus on pathologizing symptoms, our findings support the "Good Life" model, where well-being is achieved through the restoration of agency. Practically, this protocol offers a high-impact, low-barrier solution for the "Active Adult Workforce," a demographic often underserved in traditional art therapy literature. This study provides a vital blueprint for mental health care in conflict-shadowed or economically volatile regions where physical access to therapy is hindered by geography, cost, or social stigma.

5.3 Limitations of the Study

Despite the significant findings, this study acknowledges several limitations. Technological volatility was a primary challenge; in the Iranian context, frequent internet bandwidth throttling and VPN disruptions occasionally interrupted the "Flow Channel," potentially affecting the continuity of immersion for some participants. Additionally, as the intervention was conducted in SOCE, the physical environment of the participants could not be fully controlled; factors such as domestic noise or family interruptions may have acted as external stressors. Finally, while the transnational nature of the sample (N=60) provided rich qualitative depth, the sample size remains relatively small for broad statistical generalization across the entire adult populations of Turkey and Iran.

5.4 Recommendations for Future Research

To build upon the foundations established in this research, future studies should focus on longitudinal assessments—specifically measuring the "Wash-out Effect" to determine the long-term sustainability of stress reduction. Furthermore, integrating physiological measures such as Heart Rate Variability (HRV) or cortisol levels would provide biological confirmation of self-reported flow states. Future protocols should also test this methodology with displaced populations who lack any access to physical mental health infrastructure.

5.5 Final Reflection

Ultimately, this research suggests that in an era of a global "perceived stress epidemic," the cultivation of Flow through intuitive art is not a luxury, but a necessary act of psychological self-reclamation. By resolving the "Integration of Opposites" on the canvas, individuals can regain the internal stability required to navigate the complexities of their external worlds.

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