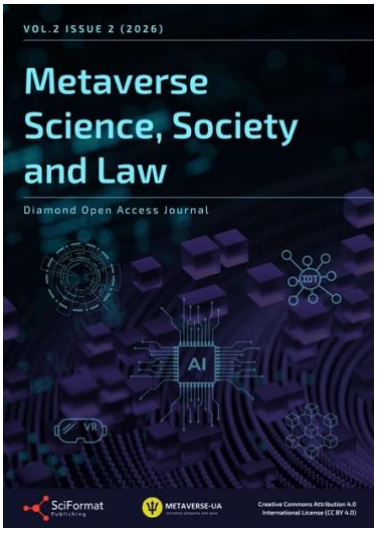

Metaverse Science, Society and Law

Vol. 2, Issue 3 (2026)

SciFormat Publishing

Publisher:
SciFormat Publishing Inc.

ISNI: 0000 0005 1449 8214
2734 17 Avenue Southwest, Calgary,
Alberta, Canada, T3E0A7

+15878858911
editorial-office@sciformat.ca

ARTICLE TITLE	DECODING SOMATIC COMMUNICATION: A TRIADIC HUMAN-AI CO-CREATION FRAMEWORK FOR POST-CANCER PATIENT AUTONOMY
DOI	https://doi.org/10.69635/mssl.2026.2.3.54
RECEIVED	12 April 2026
ACCEPTED	27 July 2026
PUBLISHED	10 August 2026
LICENSE	The article is licensed under a **Creative Commons Attribution 4.0 International License.**

DECODING SOMATIC COMMUNICATION: A TRIADIC HUMAN-AI CO-CREATION FRAMEWORK FOR POST-CANCER PATIENT AUTONOMY

Iuliia Ihnatenko
Restorative Somatic Tattoo Practitioner, Educator, Founder of LuluBeautyLux Studio, USA, Independent Researcher, Department of Nursing, Obukhiv Medical College
ORCID ID: 0009-0009-8887-7088

Liudmyla Vyshkvarok
M.Sc. in Architecture, Creative Designer, Arts Educator
ORCID ID: 0009-0005-5425-4959

Diana Raschupkina
M.Sc. in Education, Independent Researcher, International Institute of Psychological Maturity, USA
ORCID ID: 0009-0007-9516-8349

ABSTRACT

The rapid evolution of intelligent systems prompts a significant paradigm shift from purely computational optimization toward active mediation within highly subjective, delicate, and deeply personal human domains. Within the conceptual frameworks of Human-Centered Artificial Intelligence (HCAI) and Affective Computing, these intelligent architectures are increasingly recognized as dynamic digital intermediaries. This paper outlines a systematic framework designed to integrate generative AI modalities into the field of restorative tattoo art, specifically targeting psychological and somatic rehabilitation post-oncological disease. By combining multimodal large language models (LLMs) with advanced affective computing configurations, the proposed methodology resolves the "verbalization bottleneck" inherent in conventional trauma processing. The system maps uncodified emotional inputs into precise visual parameters, thereby facilitating post-traumatic growth, somatic reclamation, and clinical patient autonomy.

KEYWORDS

Human-Centered Artificial Intelligence (HCAI), Affective Computing, Restorative Tattoo Art, Post-Oncological Rehabilitation, Somatic Reclamation

CITATION

Iuliia Ihnatenko, Liudmyla Vyshkvarok, Diana Raschupkina. (2026) Decoding Somatic Communication: a Triadic Human-AI Co-Creation Framework for Post-Cancer Patient Autonomy. *Metaverse Science, Society and Law*. Vol. 2, Issue 3. doi: 10.69635/mssl.2026.2.3.54

1. Introduction: AI in Somatic and Psychosocial Rehabilitation

The post-oncological recovery landscape frequently presents a systemic crisis characterized by intertwined psychological trauma, morphological alterations, and profound somatopsychic dissociation. Aggressive therapeutic interventions ranging from radical mastectomies to invasive surgical resections and systemic chemotherapy severely disrupt a patient's self-perception, engendering a fractured sense of identity, diminished femininity, and compromised bodily autonomy. Quantitative empirical assessments underscore the magnitude of this disruption, revealing that up to 92% of post-mastectomy patients experience profound body-image disturbances, which regularly co-occur with elevated clinical indices of depression, anxiety, and generalized distress (Thakur et al., 2022; Konain et al., 2025).

This profound disruption reflects what Dinora Pines (1993) conceptualized as the unconscious enactment of the female body, where physical topographies serve as a critical arena for psychic representation. Within this symbolic architecture, the female breast operates as a unique convergence point for multiple overlapping psychic dimensions, including motherhood, early nursing, sexuality, attractiveness, and primary narcissistic integrity. Consequently, a radical mastectomy transcends localized anatomical loss, activating archaic unconscious fantasies of object loss, bodily mutilation, and castration anxiety.

This psychodynamic reality aligns with Sigmund Freud's (1923) classical framework positioning the physical corpus as the ultimate stage of unconscious conflict, wherein the psyche speaks through somatic configurations when experiences resist conscious linguistic articulation. In this light, the post-surgical scar is re-evaluated not merely as a medical byproduct, but as a materialized, yet unsymbolized, trauma trace—a raw fragment of experience that demands active psychic processing to prevent it from persisting as an unintegrated, alien object within the bodily Ego structure.

While clinical oncology primarily focuses on physiological survival and anatomical repair, a critical therapeutic vacuum persists regarding the long-term somatic integration and emotional processing of the altered physical corpus (Mishra et al., 2023). To mitigate this empirical oversight, contemporary fine line tattooing has evolved into an essential, non-clinical modality for identity reclamation, emotional integration, and somatic governance. By converting highly personalized trajectories of survival into permanent dermal art, this practice facilitates a deliberate externalization of trauma. Qualitative scholarship confirms that restorative tattooing operates as a potent mechanism for meaning-making, allowing survivors to reconstruct their fractured identities and actively delineate new boundaries across their physical canvas (Balagangadharan & Sanal, 2025; Crompton et al., 2020).

This modern adoption reflects a broader sociological shift; as psychoanalytic and demographic analyses demonstrate, contemporary body modifications have largely shed historical associations with antisocial behavior or impulsivity (Hirsch, 2009). Instead, dermal alterations are increasingly evaluated as expressions of a gentle, almost poetic or esoteric self-determination, resonating with female cohorts who statistically comprise the predominant demographic engaging in body modification rituals (Hirsch, 2009).

Although the mechanical execution of the tattoo remains an inherently manual, highly specialized human process rooted in interpersonal empathy, generative artificial intelligence has emerged as a transformative cognitive scaffolding. Operating during the pre-procedural consultative phase, intelligent systems optimize the translation of abstract, non-linear trauma into structured, anatomically viable visual concepts. The overarching clinical and computational trajectory of this rehabilitative framework is structurally mapped in Figure 1. By positioning non-verbal machine intelligence layers directly at the intersection of the communicative impasse, the model facilitates a fluid transition toward active, creative somatic engagement, effectively transforming a clinical rehabilitation protocol into an autonomous ritual of identity reclamation.

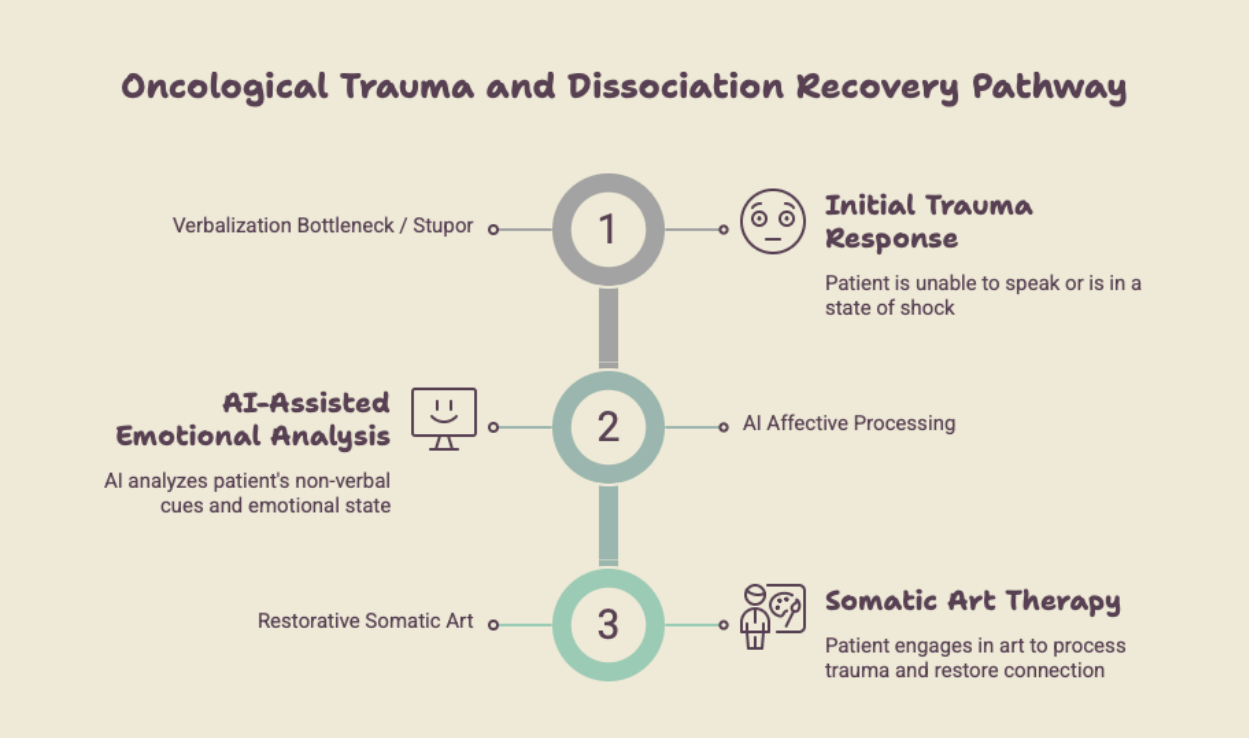

Fig. 1. *Sequential Stages of the Oncological Trauma and Dissociation Recovery Pathway*

Note. This vertical sequential diagram illustrates the three-tiered therapeutic pathway designed to mitigate somatopsychic dissociation. The trajectory maps the progression from the initial shock-induced trauma response and verbalization bottleneck, through AI-assisted multimodal emotional processing, to the final execution of restorative somatic art functioning as a permanent transitional object.

2. Theoretical Framework: Affective Computing and Multimodal Architecture

Formulating an empirical architecture capable of decoding highly subjective emotional states requires a foundational reliance on Affective Computing and Human-Computer Interaction (HCI). To accurately capture the subtle psychological shifts within a trauma survivor, contemporary systems must move past unimodal data streams toward sophisticated multimodal frameworks that integrate linguistic, behavioral, and physiological data (Wang et al., 2022; Abdullah et al., 2021). Within this computational paradigm, advanced deep learning models execute real-time feature extraction across diverse modalities. Computer vision algorithms, for instance, track micro-expressions and kinesic trajectories to infer underlying affective states, successfully bypassing conscious verbal defense mechanisms (Leong et al., 2023).

As synthesized in Table 1, the framework relies on a multi-layered computational approach to bypass the patient's conscious cognitive defenses. Table 1 systematically outlines the structural matrix of multimodal affective inputs, mapping distinct data streams to their respective deep learning and statistical classification algorithms. A critical takeaway from this matrix is the synergy between behavioral metrics (such as visual micro-expressions) and objective physiological signals. Notably, the integration of electroencephalography (EEG) data via Wavelet Transform-Support Vector Machine (WT-SVM) classifiers yields a quantified emotion-recognition accuracy exceeding 82% in valence and arousal mapping. This rigorous computational layering ensures that unstructured linguistic fragments are converted into formalized, high-dimensional semantic tokens, providing an empirically grounded baseline for downstream text-to-image latent diffusion operations.

Table 1. Multimodal Affective Input and Feature Extraction Matrix

Data Modality	Sensor / Source	Primary Processing Algorithms	Extracted Affective Features	Empirical Target / Accuracy
Visual / Kinesic	Cameras / Computer Vision Systems	Deep Learning Frameworks	Facial micro-expressions and body gesture/kinesic trajectories	Bypassing of conscious verbal filters and defense mechanisms
Physiological	Electroencephalography (EEG) Arrays	Wavelet Transform-Support Vector Machine (WT-SVM) Classifiers	Cortical oscillations	Emotion-recognition accuracy >82% (Valence and Arousal mapping)
Linguistic	Unstructured Text and Speech Inputs	Large Language Model (LLM) Paradigms	Traumatic semantic markers and affective linguistic variants	Formalized text tokens optimized for downstream latent diffusion processing

3. De-Bottlenecking the Verbalization Impasse via LLMs

At the core of the consultative phase lies a severe communicative impediment often formalized as the verbalization bottleneck or cognitive stupor. Survivors navigating post-traumatic stress or profound somatic alienation frequently encounter cognitive blocks that severely constrain their ability to translate raw emotional distress, abstract vulnerability, or implicit concepts of resilience into concrete design instructions.

This communicative impasse is illustrated by authentic clinical verbatims from post-cancer patients during consultation, who frequently express raw, non-linear desires such as: “I want to feel alive again,” “I want to reclaim my femininity,” or “I want this to no longer look like a scar.”

To resolve this communicative impasse, the proposed framework deploys Large Language Models (LLMs) systematically fine-tuned for psychological support and structured conversational alignment. Extensive systematic reviews and randomized controlled trials confirm that interactive conversational AI systems substantially alleviate indices of psychological distress and depression, highlighting their viability as responsive cognitive scaffolding (Li et al., 2023; Hua et al., 2025).

From a psychodynamic perspective, this computational intervention addresses what Wilfrid Bion (1962) termed beta-elements, defined as raw, unsymbolized psychic impressions and the affective chaos of trauma that the psyche cannot process autonomously. Within this configuration, generative AI is conceptualized as a "digital container for affects," executing the psychological function of containment historically provided by the maternal figure in early development and by the clinician in psychotherapeutic settings. By restructuring disjointed narrative fragments into formalized semantic tokens, this digital containment constructs a unique authorial symbolization triangle: affect, image, meaning.

In this loop, the AI acts as the baseline catalyst for primary symbolization, transforming uncodified affect into visual metrics as organized in Figure 2.

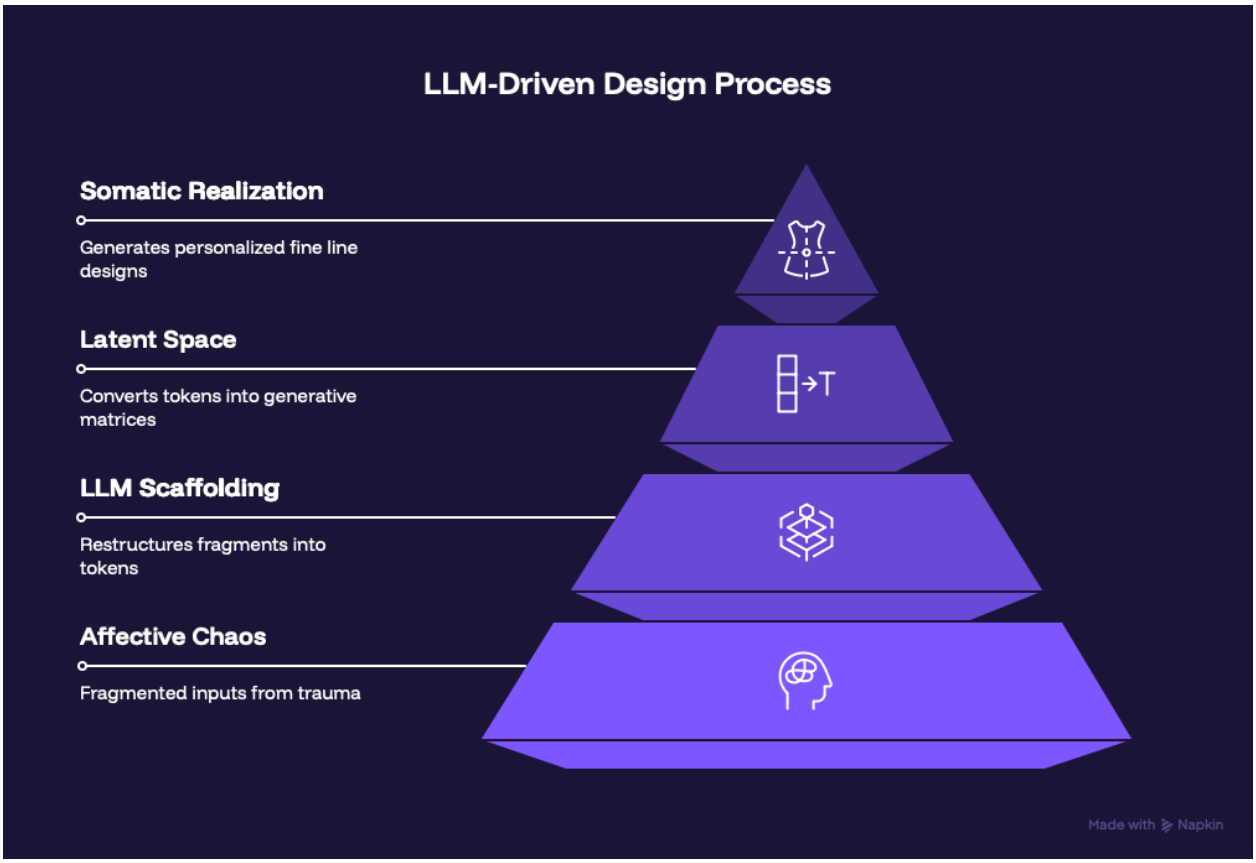

Fig. 2. *Hierarchical Layering of the LLM-Driven Design Process*

Note. This pyramid diagram illustrates the layered, bottom-up computational abstraction of patient affect. The process initiates at the foundational baseline of raw, unstructured emotional trauma ("Affective Chaos") and progressively filters through computational, structured, and generative latent layers to culminate in a highly tailored visual outcome ("Somatic Realization") at the apex.

When a client provides fragmented, emotionally uncodified, and non-linear linguistic inputs, the optimized LLM processes these raw semantic markers and projects them into higher-dimensional artistic and symbolic embedding spaces. This processing architecture is epistemologically derived from systems such as CBT-LLM, which utilize structured Cognitive Behavioral Therapy question-answering paradigms to generate highly relevant, therapeutically supportive textual outputs (Na, 2024). By restructuring disjointed narrative fragments into formalized semantic tokens, the AI functions as a digital emotional mediator, preparing the conceptual data for downstream text-to-image latent diffusion operations.

4. Psychoanalytic Validation: The Somatic Transitional Object

Evaluating the therapeutic efficacy of this AI-augmented methodology necessitates a rigorous psychoanalytic contextualization, achieved by transposing Donald Winnicott's foundational concept of the transitional object. Originally conceptualized within developmental psychology to describe an intermediate, safe psychological space where a physical entity downregulates separation anxiety, this framework elegantly clarifies the cognitive processing of severe somatic trauma. Following aggressive oncological interventions, patients frequently experience their own bodies as sites of betrayal, permanent deformation, and alienation, inducing a state of somatopsychic dissociation that fractures the continuity of the bodily self. However, as Hirsch observes, intentional body modifications allow the physical corpus to be actively reclaimed as an instrument of communication; the body speaks when linguistic capacities are compromised (Hirsch, 2009).

To synthesize these interlocking psychodynamic and technical stages, this study establishes a formalized, continuous transformation chain for post-oncological trauma. The comprehensive authorial conceptual framework modeling this somatopsychic transformation is systematically codified in Figure 3. This pathway delineates the exact sequential transitions required to guide the patient from initial physical alienation to a state of fully integrated post-traumatic resilience.

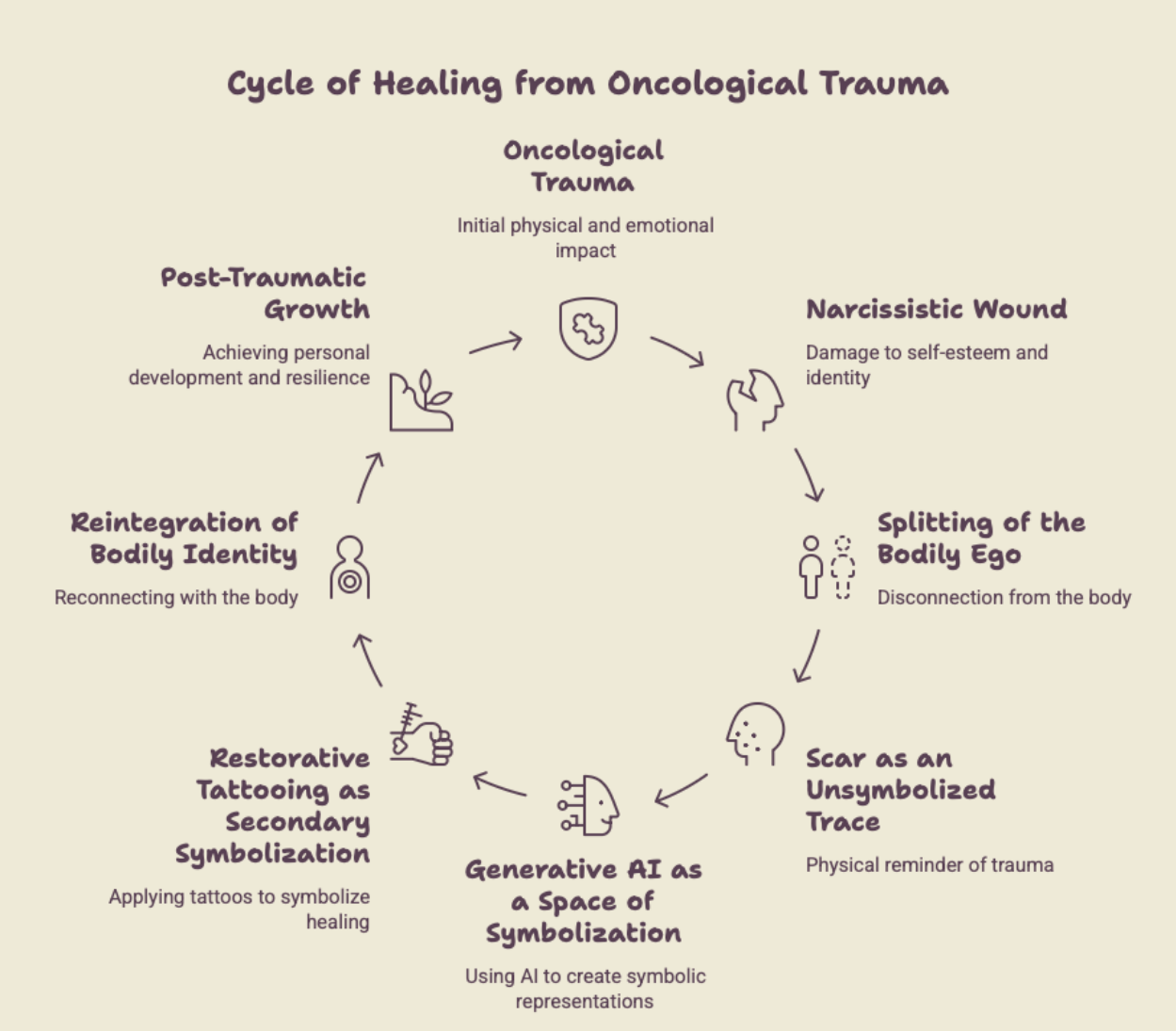

Fig. 3 *The 8-Stage Conceptual Framework of the Cycle of Healing from Oncological Trauma*

Note. This circular flow diagram models the comprehensive 8-stage post-oncological recovery trajectory. It illustrates the psychodynamic transformation from the initial trauma, subsequent narcissistic wounding, and splitting of the bodily Ego, through AI-assisted primary symbolization and secondary symbolization via restorative tattooing, resulting in complete bodily reintegration and post-traumatic growth.

Within this interactive matrix, a delicate tattoo applied directly to the traumatized epidermis operates as a permanent, unyielding transitional object. It establishes a physical somatic anchor and a tangible bridge linking the internal trauma history with an external, reclaimed reality of survival and biological rebirth. This process mirrors clinical observations from digital Somatic Experiencing® group interventions for breast cancer survivors, which indicate that body-centric trauma processing substantially reduces psychological distress while facilitating a positive body-image reconstruction (Vagnini et al., 2023). Because the dermal modification is immutable and permanent, its physical presence counteracts chronic existential anxiety, permanently anchoring the patient's poetic self-determination within the skin (Hirsch, 2009). The individual thus transitions from being a passive object of clinical manipulation to an active, sovereign author of her own physical narrative.

5. The Triadic Co-Creation Ecosystem and Algorithmic Personalization

Crucially, the introduction of computational intelligence does not displace human agency; instead, it synthesizes a highly cooperative, triadic co-creation ecosystem. In this architecture, the client functions as the primary affective data source, the AI acts as a rapid, non-judgmental prototyping engine that objectifies internal emotional states, and the tattoo artist operates as an empathetic filter who contextualizes the generative outputs into anatomically viable, safe, and emotionally resonant designs.

By coining the term "witness to transformation," this framework functionally elevates the contemporary restorative artist's role, aligning it with the clinical position of a psychotherapist who provides active emotional containment during the physical enactment of somatic art.

The operational success of this framework depends heavily on the aesthetic alignment between generative imaging capacities and the specific technical demands of fine line tattooing. Defined by sub-millimeter line weights, minimalist composition, and subtle fluid geometry, the fine line style delivers a soft, non-intrusive visual narrative uniquely suited for covering surgical scars and respecting compromised cutaneous tissue.

Generative computational platforms are optimized through style-transfer algorithms and custom embedding models to specialize precisely in these minimalist aesthetics. By deploying computer vision algorithms to evaluate typographic and photographic data of a client's specific surgical scarring or post-mastectomy anatomy, the system optimizes the geometric trajectory of the generated fine lines, ensuring they flow organically with the body's natural landscape. This high degree of algorithmic personalization psychologically repairs the fractured body-mind connection.

Furthermore, this digital workflow enforces the ethical mandate of patient autonomy. While traditional consultations may expose a client to subtle interpersonal pressure to accept an artist's pre-drawn rendering due to temporal or communicative boundaries, real-time generative iteration democratizes the creative phase. By presenting dozens of stylistic variations instantaneously, the system grants the survivor ultimate sovereignty over the visual identity she chooses to permanently adopt, converting the studio environment into a trauma-informed, autonomous space of ritualistic recovery (Maxwell et al., 2023; Macedo, 2021).

This process enables a thorough psychoanalytic deconstruction of rebirth motifs within restorative art, turning individual icons into a new psychic text written directly over the material trauma trace. Within this iconographic taxonomy, flowers represent the continuity of life post-destruction; butterflies signify structural, metamorphic transformation; birds embody existential liberation; and tree roots represent the preservation of deep internal anchoring despite profound physical loss.

6. Discussion: Safety, Gaps, and Clinical Translation

While the integration of generative models offers profound rehabilitative utility, critical challenges regarding deployment safety, empirical validation, and clinical translation must be systematically addressed. A prominent vulnerability identified within current large language model scoping reviews is the complete absence of standardized, validated psychometric or visual evaluation protocols necessary to verify the safety and clinical appropriateness of automated generative outputs in trauma-informed contexts (Hua et al., 2024, 2025). Furthermore, standalone conversational and generative models frequently exhibit systemic limitations, lacking the nuanced contextual empathy and clinical reasoning required for severe psychotraumatology, which introduces distinct risks of semantic hallucination or counter-therapeutic visual framing (Hua et al., 2025; Li et al., 2023).

To ensure clinical viability, the architectural limitations of applying generative models to trauma care must be rigorously evaluated. Table 2 summarizes the systemic vulnerabilities, operational risks, and proposed mitigation strategies inherent in AI-mediated somatic rehabilitation. The matrix categorizes empirical gaps identified in recent literature—specifically emphasizing the absence of standardized safety metrics and the functional boundaries of autonomous conversational agents—and aligns them with targeted technical solutions. The compiled data indicate that standalone AI operations introduce significant risks of counter-therapeutic visual synthesis and semantic hallucinations. Consequently, Table 2 underscores a critical paradigm requirement: generative systems must be restricted to an auxiliary cognitive scaffolding role within a strict "human-in-the-loop" triadic configuration, ensuring absolute determinative oversight by clinical supervisors and human art practitioners.

These computational gaps are further complicated by empirical generalizability constraints within existing clinical research; specifically, literature detailing the therapeutic efficacy of dermal modifications relies heavily on small, localized qualitative designs, which restricts broader external validity (Bell, 2023).

Consequently, this framework explicitly dictates that generative models must never function as autonomous clinical or design entities. The system is configured strictly as an auxiliary cognitive instrument operating within a highly structured human-in-the-loop configuration, ensuring that human tattoo practitioners and supervising clinicians maintain absolute determinative oversight over all generative iterations.

Table 2. Systemic Vulnerabilities and Mitigation Strategies in AI-Mediated Trauma Care

Identified Systemic Gap	Empirical Evidence / Source	Operational Risk	Proposed Mitigation Strategy
Absence of Standardized Safety Metrics	Hua et al. (2024, 2025)	Exposure to psychologically unsafe, triggering, or clinically inappropriate automated visual outputs in trauma-informed contexts	Implementation of a strict human-in-the-loop triadic configuration (Patient-AI-Artist) under direct clinical oversight
Limitations of Autonomous Systems	Hua et al. (2025); Li et al. (2023)	Algorithmic hallucinations, lack of contextual therapeutic empathy, and counter-therapeutic visual synthesis	Absolute exclusion of standalone AI operations; mandatory positioning of the human artist and psychologist as active determinative filters
Empirical Generalizability Constraints	Bell (2023)	Restricted external validity and unverified long-term clinical outcomes of localized dermal modification therapies	Restriction of the computational pipeline to an auxiliary cognitive scaffolding role rather than a standalone clinical diagnostic tool

7. Conclusions

In conclusion, the systematic deployment of artificial intelligence architectures within therapeutic and creative fields achieves optimal efficacy not through the displacement of human expertise, but through the deliberate expansion of collaborative bandwidth. By unifying advanced machine intelligence, multimodal affective computing, classical psychoanalytic theory, and technical somatic art, a rigorous framework for holistic medical rehabilitation is established. Within this coordinated structure, computational assets directly serve the profound human requirement for psychological recovery, somatic reintegration, and emotional autonomy.

REFERENCES

1. Abdullah, S., Ameen, S., Sadeeq, M., & Zeebaree, S. R. M. (2021). Multimodal emotion recognition using deep learning. *Journal of Applied Science and Technology Trends, 2*(2), 67–74. https://doi.org/10.38094/jastt20291
2. Balagangadharan, P., & Sanal, S. (2025). Ephemeral ink, eternal strength: Exploring the symbolic and therapeutic dimensions of tattoos in the healing process of cancer survivors. *The Creative Launcher, 10*(2), 16–28. https://doi.org/10.53032/tcl.2025.10.2.16
3. Bell, K. (2023). *Tattoos and trauma: Are tattoos healing for trauma?* PDXScholar Academic Works. https://doi.org/10.15760/honors.1355
4. Bion, W. R. (1962). *Learning from experience*. Heinemann.

5. Crompton, L., Amrami, G. P., Tsur, N., & Solomon, Z. (2020). Tattoos in the wake of trauma: Transforming personal stories of suffering into public stories of coping. *Deviant Behavior, 42*(10), 1242–1255. https://doi.org/10.1080/01639625.2020.1738641
6. Daly, A., Karl, J., & Dunne, S. (2024). "Art is just something that makes people heal"—A qualitative investigation of tattoo artists' perspectives on cancer survivorship therapeutic tattoos. *Journal of Cancer Survivorship, 20*(2), 724–737. https://doi.org/10.1007/s11764-024-01682-4
7. Eschler, J., Bhattacharya, A., & Pratt, W. (2018). Designing a reclamation of body and health: Cancer survivor tattoos as coping ritual. In *Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems* (pp. 1–12). https://doi.org/10.1145/3173574.3174084
8. Freud, S. (1923). *The ego and the id*. Hogarth Press.
9. Hirsch, M. (2009). *"It's my body . . . and I can do what I want with it": A psychoanalytic view on dissociation and body enactments*. Kogito-Centre.
10. Houssein, E. H., Hammad, A., & Ali, A. A. (2022). Human emotion recognition from EEG-based brain-computer interface using machine learning: A comprehensive review. *Neural Computing and Applications, 34*, 12527–12557. https://doi.org/10.1007/s00521-022-07292-4
11. Hua, Y., Na, H., Li, Z., Liu, F., Fang, X., Clifton, D. A., & Torous, J. (2025). A scoping review of large language models for generative tasks in mental health care. *NPJ Digital Medicine, 8*(1), 14–25. https://doi.org/10.1038/s41746-025-01611-4
12. Hua, Y., Na, H., Li, Z., Liu, F., Fang, X., Clifton, D. A., & Torous, J. (2024). Applying and evaluating large language models in mental health care: A scoping review of human-assessed generative tasks. *arXiv*. https://doi.org/10.48550/arXiv.2408.11288
13. Hua, Y., Siddals, S., Galatzer-Levy, I., Xia, W., Hau, C., Na, H., Flathers, M., Linardon, J., Ayubcha, C., & Torous, J. (2025). Charting the evolution of artificial intelligence mental health chatbots from rule-based systems to large language models: A systematic review. *World Psychiatry, 24*(1), 89–102. https://doi.org/10.1002/wps.21352
14. Konain, N. E., Fatima, A., Hayat, U., & Shahid, W. (2025). Understanding psychological distress and body image disturbances among breast cancer survivors: A role of surgery. *Bulletin of Business and Economics (BBE), 14*(1), 56–68. https://doi.org/10.61506/01.00570
15. Leong, S. C., Tang, Y., Lai, C. H., & Lee, C. K. M. (2023). Facial expression and body gesture emotion recognition: A systematic review on the use of visual data in affective computing. *Computer Science Review, 48*, 100545. https://doi.org/10.1016/j.cosrev.2023.100545
16. Li, H., Zhang, R., Lee, Y. C., Kraut, R. E., & Mohr, D. (2023). Systematic review and meta-analysis of AI-based conversational agents for promoting mental health and well-being. *NPJ Digital Medicine, 6*(1), 112–125. https://doi.org/10.1038/s41746-023-00979-5
17. Macedo, S. (2021). Reclaiming the body through tattoos. *European Scientific Journal, 17*(22), 37–51. https://doi.org/10.19044/esj.2021.v17n22p37
18. Maxwell, D., Leat, S. R., Thomas, J. M., Thomas, S. A., & Coad, S. (2023). The tattoo environment as a therapeutic healing space for sexual assault survivors. *Deviant Behavior, 45*(3), 438–455. https://doi.org/10.1080/01639625.2023.2250052
19. Mishra, A., Nair, J., & Sharan, A. M. (2023). Coping in post-mastectomy breast cancer survivors and need for intervention: Systematic review. *Breast Cancer: Basic and Clinical Research, 17*, 1–11. https://doi.org/10.1177/11782234231209126
20. Na, H. (2024). CBT-LLM: A Chinese large language model for cognitive behavioral therapy-based mental health question answering. In *Proceedings of the ACK International Conference on NLP* (pp. 2930–2940). https://doi.org/10.48550/arXiv.2403.16008
21. Pines, D. (1993). *A woman's unconscious use of her body*. Routledge.
22. Schmutz, Y. V., Kravchenko, T., Ben Souissi, S., & Kurpicz-Briki, M. (2024). Integrating generative AI into art therapy: A technical showcase. *arXiv*. https://arxiv.org/abs/2412.03287
23. Thakur, M., Sharma, R., Mishra, A. K., Singh, K., & Kar, S. K. (2022). Psychological distress and body image disturbances after modified radical mastectomy among breast cancer survivors: A cross-sectional study from a tertiary care centre in North India. *The Lancet Regional Health – Southeast Asia, 7*, 100077. https://doi.org/10.1016/j.lansea.2022.100077

24. Vagnini, D., Grassi, M. M., & Saita, E. (2023). Evaluating Somatic Experiencing® to heal cancer trauma: First evidence with breast cancer survivors. *International Journal of Environmental Research and Public Health, 20*(14), 6412. https://doi.org/10.3390/ijerph20146412
25. Wang, Y., Song, W., Tao, W., Liotta, A., Yang, D. W., Li, X., Gao, S., Sun, Y., Ge, W., Zhang, W., & Zhang, W. (2022). A systematic review on affective computing: Emotion models, databases, and recent advances. *arXiv*. https://doi.org/10.48550/arXiv.2203.06935
26. Wang, Z., Jiao, R., & Jiang, H. (2020). Emotion recognition using WT-SVM in human-computer interaction. *Journal of New Media, 2*(2), 67–74. https://doi.org/10.32604/jnm.2020.010674
27. Winnicott, D. W. (1953). Transitional objects and transitional phenomena: A study of the first not-me possession. *International Journal of Psycho-Analysis, 34*, 89–97.