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Commentary
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Development of Artificial Intelligence (AI) Application for Psychology and Art Therapy

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Abstract

Recent trends for psychology, art therapy, and artificial intelligence (AI) would be described with some perspectives. Art therapy support using generative AI has attracted attention. Clinical introduction of AI offers various new benefits and creative possibilities, such as expanding the diversity of expression, enabling the quantification of various factors through automated analysis, and improving access. The impact of AI-generated images shows clients' projective/transference relationships, their effects on self-efficacy/intrinsic motivation, and the amplification of bias in therapists' clinical judgments. Integrated approach would be required, where a balance is maintained between the core elements of subjectivity of expression and the therapeutic relationship.

Keywords

Art Therapy, Artificial Intelligence, Mental Health, Psychology, Integrative Medicine

Abbreviations

AI: Artificial Intelligence; IM: Integrative Medicine

Commentary

In recent clinical practice, a variety of mental health interventions have been found. Among them, a novel type of therapy using artificial intelligence (AI) has been reported [1]. Such modality may develop several potential in supporting patients with diseases and for clinical staffs and therapists. The authors and collaborators have been engaged in psychosomatic medicine, psychology, holistic medicine, and integrative medicine (IM) so far [2,3]. For art therapy, we have summarized several reports related to these categories [4,5]. In this article, recent trend concerning the integrated fields of psychology, art therapy, and AI will be introduced associated with some perspectives.

In the IM and psychology fields, art therapy refers to a group of psychotherapies that promote emotional expression, self-understanding, and the reconstruction of interpersonal relationships. They are usually performed through creative activities such as painting, sculpture, music, and dance. From a psychological perspective, discussions center on psychological

mechanisms such as emotion regulation, meaning-making (narrative and/or reframing), symbolization, and concretization through non-verbal expression. In recent years, advances in neuroscientific research have suggested the relationships with neuroplasticity, interoception, and the mirror neuron system as potential bases for therapeutic effects [6]. However, the causal chain is still in the hypothetical stage, and bridging this with psychological experience remains a future challenge [7].

Numerous studies and clinical investigations have accumulated empirical evidence. However, establishing appropriate and valid research designs remains challenging. The quality of artwork and the therapeutic process vary depending on the project and therapist. Because these are not numerically or measurably defined factors, measuring effectiveness through randomized controlled trials (RCTs) is difficult [8]. This is particularly true in research topics such as elderly dementia care and trauma treatment, where multidimensional outcomes, such as narrative change and improvements in daily functioning, are emphasized. Therefore, observational studies and mixed-method verification methods are recommended [9]. In recent years, a dualistic model, in which both the artwork itself and the therapeutic alliance contribute to therapeutic effectiveness, has been gaining support in clinical practice [10].

In recent years, art therapy support using generative AI and machine learning has been attracting attention. Compared to traditional methods, clinical introduction of AI offers a variety of new benefits and creative possibilities. These benefits include expanding the diversity of expression, enabling the quantification of various factors through automated analysis, and improving access. However, risks and problems also exist, which include a decline in creativity, privacy issues, and a weakening of the therapeutic relationship. From these issues associated with benefits and risks, are summarized in **Table-1**. This information was mainly from recent report [11-13].

From a psychological perspective, the introduction and application of AI can bring about changes in mediators in the therapeutic process. Novel research topics have emerged in the actual clinical practice for patients and therapists [13]. They include the impact of AI-generated images on clients' projective and transference relationships, their effects on self-efficacy and intrinsic motivation, and the amplification of bias in therapists' clinical judgments [14]. To examine these complex effects, multi-layered assessments will be useful that integrate qualitative data with behavioral, physiological, and linguistic data.

Table-1: Advantages and Ethical/Clinical Challenges of AI Integration in Art Therapy

Category	Aspect	Description / Mechanism	Main Findings	References
Advantages	1. Creative and useful stimulation	AI systems (generative models, style transfer tools) provide initial ideas or imagery that can broaden patients' expressive range and lower creative inhibition.	AI-assisted visual prompts enhanced engagement and originality in art therapy sessions.	Shojaei et al., Front Psychol 2024:
	2. Quantitative progress evaluation	Deep learning–based image analysis can objectively assess color tone, shape, stroke pattern, and emotional facial expression during therapy.	Computer vision detected emotional valence shifts correlated with therapeutic progress.	Luo et al., J Affect Disord 2024:
	3. Accessibility and remote delivery	Online AI-facilitated platforms support virtual art therapy, enabling broader participation (rural or mobility-limited patients).	Hybrid and tele-art therapy reduced geographical barriers while maintaining session fidelity.	Zubala et al., Arts Psychother 2025:
Challenges	4. Reduced creativity or autonomy	Overreliance on AI-generated ideas may suppress clients' intrinsic creativity and self-directed exploration.	Participants sometimes deferred to algorithmic output rather than personal intuition.	Shojaei et al., Front Psychol 2024:
	5. Privacy and data protection	Visual and biometric data (drawings, expressions, voice) processed by AI pose risks of data misuse and insufficient anonymization.	Highlighted ethical necessity for secure cloud storage and informed consent in digital art therapy.	Luo et al., J Affect Disord 2024:
	6. Weakening of therapeutic alliance	Digital mediation can reduce empathic attunement and spontaneous interpersonal feedback between therapist and client.	Therapists reported decreased immediacy of emotional resonance in virtual AI-assisted settings.	Zubala et al., Arts Psychother 2025:

Practical and ethical considerations are also necessary in clinical and research settings. Attention must be paid to data management (anonymization of generated images and audio logs), accountability (providing evidence for AI output), expanded informed consent, and human-in-the-loop oversight of AI output [15]. Furthermore, cultural backgrounds vary by country or region, and the backgrounds of each client's decisions may differ. In such cases, differences in interpretation of various subjects may arise. From the perspective of the digital divide, the information gap between those who can use information and communication technology (ICT) and those who cannot is significant, leading to significant disparities in access, knowledge, abilities, and social and economic backgrounds [16]. From a system perspective, legal arrangements for eligibility standards, responsibility allocation, and insurance coverage under AI intervention will be important issues in the future.

For future prospectives, four plausible paths would be proposed. First, to strengthen intervention studies (RCTs and controlled trials) using AI and mechanistic research would be required that incorporates neurological and physiological indices. Future developments are anticipated in this era. Second, we need to theorize a tripartite model of the AI-clinician-client relationship and consider an ethical framework [17]. Establishing this relationship will lay the foundation for smooth progress in all directions. Third, each practice needs appropriate protocol in the actual therapy. This involves developing and expanding educational curricula associated with safety standards [18]. Fourth, it is desirable for the parties involved (patients/clients) to participate and collaborate with therapists in co-designing. This can be achieved through cultural appropriateness, legal and healthcare systems, and other factors.

In summary, this report has discussed the relationship among art, psychology, and AI. Based on past developments, art therapy has certainly expanded for decades. In the future, an integrated approach that maintains a balance between the core elements of "subjectivity of expression" and "therapeutic relationship" will be required.

Conflict of Interest

The authors have read and approved the final version of the manuscript. The authors have no conflicts of interest to declare.

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