



RESEARCH ARTICLE

Digital Painting-Based Art Therapy for Mental Health: A Narrative Review of Psychological Mechanisms in Technology-Mediated Visual Creation

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Abstract: Digital Painting-Based Art Therapy (DPBAT) is an emerging form of technology-mediated visual creation in mental health contexts, but its conceptual boundary and mechanism-related evidence remain unclear. This narrative review aims to clarify what distinguishes DPBAT from broader digital art therapy, online art therapy, telehealth arts therapies, and general digital mental health interventions. Using thematic narrative synthesis, the review integrates literature from art therapy, digital art therapy, telehealth arts therapies, digital art-making, digital health, and human-computer interaction. Sources are classified as direct evidence, indirect evidence, or conceptual support to avoid overextending adjacent findings. The review identifies three interrelated mechanism groups: emotional externalization and emotion regulation; agency, control, and psychological safety; and immersion, self-narrative, and therapeutic communication. These pathways are presented as a preliminary analytical framework rather than a validated causal model. The review highlights the media-specific contribution of digital painting, including editability, reversibility, layers, versioning, storage, and shareability. It concludes that DPBAT is a promising but under-tested practice area that requires further empirical research, clearer clinical boundaries, and stronger ethical governance.

Keywords: Digital Painting-Based Art Therapy; Digital Art Therapy; Technology-Mediated Visual Creation; Psychological Mechanisms; Art Therapy Theory; Therapeutic Communication

1. Introduction

Art therapy has growing relevance in mental health because it uses visual expression, creative process, and the therapeutic relationship to help people work with experiences that are difficult to verbalize. Its value should not be reduced to relaxation; current discussions increasingly ask how art-making affects perception, emotion, memory, cognition, and behaviour (Strang, 2024). Digital technology has changed the media and settings of art therapy. Zubala et al. (2021) distinguish digital arts media and remote delivery, and also note related issues of ethics, the therapeutic relationship, technological limits, and clinical safety (Zubala et al., 2021).

Within this field, DPBAT has specific research potential. Tablets, styluses, drawing apps, layers, undo/redo functions, and digital storage may reduce material barriers and support a low-risk, controllable expressive process. Digital artworks can also be saved, revisited, shared, and discussed as materials for therapeutic communication. Gallo et al.'s (2025) feasibility study suggests that remote digital art-making may reduce anxiety and function as an accessible self-help pathway (Gallo et al., 2025). In this review, however, DPBAT does not include all digital art therapy, VR art therapy, online counselling, or digital mental health interventions. The core criterion is active digital image-making within a therapeutic or psychosocial support context.

However, current evidence does not yet show that DPBAT has been widely established as a standardized psychotherapeutic intervention. Available direct evidence remains limited and is mainly drawn from related areas such as digital art-making, online art therapy, digital art therapy, and technology-mediated visual creation rather than from DPBAT-specific clinical trials or large-scale therapeutic implementation studies.

Three gaps remain in the current literature. First, there is an evidence gap. Although studies on digital art-making, online art therapy, and digital art therapy have reported potential benefits for anxiety, emotional expression, well-being, and therapeutic engagement (Gallo et al., 2025; Oruç et al., 2025), DPBAT-specific clinical evidence remains limited. Existing studies rarely examine digital painting, tablet drawing, layer functions, undo/redo, versioning, and online image-sharing as a distinct therapeutic process in mental health practice. DPBAT should therefore be understood as an emerging and under-tested practice area rather than a widely validated clinical intervention. Second, there is a mechanism gap. Art therapy research has discussed emotional expression, symbolic externalization, neural processes, flow, identity, and cultural meaning (He & Zhang, 2025; Strang, 2024), but less is known about how digital painting affordances reshape these mechanisms. Functions such as layers, reversibility, instant visual feedback, and digital storage may influence emotion regulation, agency, self-narrative, and therapeutic communication, but these links remain insufficiently supported by direct empirical evidence. Third, there is a clinical implementation gap. Telehealth arts therapies and online art therapy have expanded access and shown positive potential (Oruç et al., 2025; Reitere et al., 2024), yet the field has not sufficiently clarified when DPBAT is clinically appropriate, when it requires caution, and how therapist competence, platform governance, artwork ownership, privacy, and risk management should be handled in practice.

Guided by these gaps, the review addresses three questions: RQ1: How has digital painting been conceptualized and used within technology-mediated art therapy for mental health? RQ2: What psychological mechanisms may explain the mental health value of DPBAT? RQ3: What conceptual, clinical, and ethical issues should be considered when applying DPBAT? The aim is to summarize existing knowledge and organize mechanism-related evidence, not to verify a new clinical theory.

The main contribution lies in explaining DPBAT from the media-specific properties of digital painting rather than from digital therapy in general. By focusing on active image-making, editability, reversibility, layered structure, versioning, storage, and shareability, the review clarifies how digital painting may reorganize established art therapy processes and why DPBAT should be distinguished from broader digital art therapy, online art therapy, telehealth arts therapies, and general digital mental health interventions.

2. Methodology: Narrative Review Approach

2.1 Review Design

The study uses thematic narrative synthesis to clarify the conceptual boundary of DPBAT, integrate literature on technology-mediated visual creation and mental health, and organize mechanism-related evidence. Narrative review is suitable for emerging and interdisciplinary topics when the goal is conceptual clarification and knowledge integration rather than effect-size estimation (Sukhera, 2022a, 2022b). To improve transparency, the review reports its design, search process, selection criteria, evidence classification, and synthesis procedure.

Given the emerging status of DPBAT and the limited number of DPBAT-specific clinical studies, thematic narrative synthesis was selected to clarify concepts, classify evidence, and explain plausible mechanisms. A systematic review or meta-analysis would require a more stable intervention category and more comparable outcome studies. A scoping review would mainly map the breadth of evidence. The present review instead aims to synthesize heterogeneous literature and develop a preliminary analytical framework that can guide future empirical research.

The design has three features. First, it is mechanism-oriented and examines how digital painting may support emotional externalization, emotion regulation, agency, control, psychological safety, immersion, self-narrative, and therapeutic communication. Second, it synthesizes literature from art therapy, psychology, digital health, human-computer interaction, and creative technology. Third, it treats the proposed framework as a preliminary analytical tool for future qualitative research, clinical practice, and intervention design.

To improve methodological transparency, this article uses PRISMA-informed reporting elements to present information sources, search strategy, screening stages, inclusion and exclusion criteria, and evidence types (Page et al., 2021). It also draws on qualitative evidence synthesis and integrative review to interpret experience-, meaning-, process-, context-, and mechanism-related concepts across bodies of literature (Dhollande et al., 2021; Flemming & Noyes, 2021). Table 1 summarizes the review design and search strategy.

Table 1. Review Design and Search Strategy

Methodological Component	Application in This Review	Function in the Study
Review Type	This study adopts Thematic Narrative Synthesis and incorporates PRISMA-informed reporting elements to present the literature search, screening, and evidence classification process.	It clarifies conceptual boundaries, integrates mechanism-related literature, and enhances the

Review Orientation	This study is a conceptual and mechanism-oriented review that explains how DPBAT may support mental health as a form of technology-mediated visual creation.	transparency of the literature search and synthesis process. It shifts the focus from broad claims of effectiveness to evidence-informed mechanism explanation and future empirical testing.
Information Sources	The main databases searched were Web of Science and Scopus, with PubMed, PsycINFO, ACM Digital Library, and IEEE Xplore used as supplementary databases.	It covers interdisciplinary fields including Art Therapy, Psychology, Mental Health, Digital Health, Human-Computer Interaction, and Creative Technology.
Time Scope	The search period was set as 2010–2026, and the final references prioritized studies published since 2021 in journals indexed by Web of Science or Scopus.	It considers the historical development of Digital Painting and Telehealth while ensuring the timeliness of the literature.
Core Search Terms	Art Therapy: “art therapy”, “visual art therapy”, “creative arts therapy”, “expressive arts therapy”; Digital Painting: “digital painting”, “digital drawing”, “tablet drawing”, “stylus drawing”, “digital art-making”, “digital visual art”; Technology-Mediated Therapy: “online art therapy”, “tele-art therapy”, “telehealth art therapy”, “technology-mediated therapy”, “digital intervention”, “human-computer interaction”; Mental Health: “mental health”, “anxiety”, “depression”, “stress”, “trauma”, “emotion regulation”, “well-being”, “psychological distress”.	The four groups of keywords cover the four core conceptual dimensions of art therapy, digital painting, technology-mediated therapy, and mental health.
Example Search String	(“art therapy” OR “visual art therapy” OR “creative arts therapy”) AND (“digital painting” OR “digital drawing” OR “tablet drawing” OR “digital art-making” OR “digital visual art”) AND (“mental health” OR anxiety OR depression OR stress OR trauma OR “emotion regulation” OR well-being)	It ensures that the literature search responds simultaneously to the research scope of Digital Painting-Based Art Therapy, Technology-Mediated Visual Creation, and Mental Health.

2.2 Literature Search and Selection Criteria

The literature search used Web of Science and Scopus as primary databases. PubMed, PsycINFO, ACM Digital Library, and IEEE Xplore were used as supplementary sources to cover clinical psychology, mental health, digital health, human-computer interaction, digital creativity, and technology-mediated user experience.

The preliminary search period was 2010-2026, with final references prioritizing studies published since 2021 in journals indexed by Web of Science or Scopus. This range captures the wider use of tablets, styluses, mobile drawing applications, cloud-based creative platforms, telehealth, and remote arts therapies after 2010 and especially after 2020.

The search strategy combined four concepts: art therapy, digital painting, technology-mediated therapy, and mental health. Terms included art therapy, visual art therapy, digital painting, digital drawing, tablet drawing, stylus drawing, digital art-making, online art therapy, tele-art therapy, telehealth art therapy, anxiety, depression, stress, trauma, emotion regulation, well-being, and psychological distress. Search strings were adjusted to each database while preserving these conceptual combinations.

Because this article is a thematic narrative synthesis rather than a systematic review or scoping review, the search strategy was designed to support transparent literature identification and conceptual coverage rather than exhaustive replication. Full database-specific strings were not presented as a separate supplementary table in order to avoid implying a fully systematic review design. Instead, the review reports the databases searched, search period, four concept groups, representative Boolean structure, inclusion and exclusion criteria, screening counts, and evidence classification. This level of reporting allows readers to assess the scope, boundary, and limitations of the search strategy while remaining consistent with the narrative review design.

Full search strings were developed for each database according to its search fields and syntax. The search combined four concept groups: art therapy, digital painting, technology-mediated therapy, and mental health. The complete database-specific search strings are provided in Supplementary Table A to improve reproducibility and allow readers to assess the scope and limits of the search strategy.

The search and screening process was recorded retrospectively. The search was conducted from 1 May 2026 to 30 May 2026, and the final literature verification date was 30 May 2026. Table 2 reports initial records, duplicate removal, title and abstract screening, full-text assessment, and final inclusion.

Table 2. Simplified Literature Search and Screening Process

Review Stage	Number of Records	Notes
Records identified from Web of Science	176	Main indexed database; used to identify literature in Art Therapy, Psychology, Mental Health, and interdisciplinary studies.
Records identified from Scopus	221	Main indexed database; used to supplement cross-disciplinary literature across arts, health, and technology.
Records identified from PubMed / PsycINFO	98	Used to identify clinical, psychological, and mental health-related literature.
Records identified from ACM Digital Library / IEEE Xplore	63	Used to identify Human–Computer Interaction, digital creativity, and technology-related literature.
Total records identified	558	Combined initial search records before duplicate removal.
Duplicates removed	153	Duplicate records removed across databases.
Title / abstract screened	405	Records screened for relevance to Digital Painting, Art Therapy, Technology-Mediated Visual Creation, and Mental Health.
Records excluded after title / abstract screening	289	Excluded for lack of relevance to digital visual creation, therapeutic context, or mental health.
Full texts assessed	116	Full-text articles assessed according to inclusion and exclusion criteria.
Full texts excluded	81	Excluded because of weak relevance, lack of digital component, lack of mental health focus, non-therapeutic digital art context, or insufficient conceptual contribution.
Final studies included in Narrative Synthesis	35	Final core literature included in the manuscript; includes direct evidence, indirect evidence, and conceptual support.

Core sources were identified through title and abstract screening, full-text assessment, relevance appraisal, and evidence classification. A source was retained when it contributed to at least one of the following areas: DPBAT definition, active digital visual creation, psychological mechanisms, clinical boundaries, digital affordances, or ethical governance. Sources that only discussed general digital mental health, recreational digital drawing, or technical drawing systems without therapeutic or mental health relevance were excluded. Screening was purposeful and criterion-based. Following guidance on qualitative evidence synthesis for emerging topics, sources were selected according to their relevance to the review questions and their capacity to explain concepts, experience, mechanisms, or context (Moser & Korstjens, 2023).

Inclusion criteria were: literature on art therapy, visual art therapy, digital painting, digital drawing, digital art-making, or technology-mediated visual creation; relevance to mental health, psychological well-being, anxiety, depression, stress, trauma, emotion regulation, self-expression, or therapeutic communication; and discussion of digital devices, software interfaces, online platforms, telehealth, or other technology-mediated contexts. Eligible formats included empirical studies, qualitative studies, mixed-methods studies, reviews, conceptual papers, and clinical practice reports.

Exclusion criteria were: studies on traditional art therapy without a digital or technology-mediated component; studies on digital art education, commercial illustration, animation, or entertainment without mental health relevance; general digital mental health, online counselling, or telepsychology studies without image-making; purely technical papers without psychological, therapeutic, emotional, or user-experience dimensions; and non-academic materials.

Candidate sources were appraised through three questions: Does the source help define DPBAT? Does it provide direct evidence, indirect evidence, or theoretical support for psychological mechanisms? Does it clarify clinical boundaries, therapeutic relationships, digital divide, privacy, data security, or platform ethics?

2.3 Narrative Synthesis Procedure

The synthesis combined narrative review with thematic analysis. It focused on conceptual relationships, patterns of meaning, and explanatory structures across the literature, especially how digital painting affordances may connect with psychological mechanisms and mental health support.

Screening and synthesis were conducted by the author through repeated reading, relevance appraisal, evidence classification, and theme development. Inclusion decisions and evidence categories were checked repeatedly against the research questions. As the review was conducted by a single primary researcher, the absence of independent dual screening is acknowledged as a methodological limitation. To reduce interpretive bias, the synthesis retained only themes that were supported by identifiable evidence categories and that contributed directly to the review questions.

The synthesis proceeded through four steps. First, literature mapping grouped sources into traditional art therapy, digital art therapy, online art therapy, telehealth arts therapies, digital visual art, digital mental health, and human-computer interaction. Second, conceptual extraction identified repeated concepts, including visual expression, symbolic externalization, emotion regulation, agency, control, psychological safety, embodiment, immersion, self-narrative, therapeutic communication, digital affordance, and platform ethics. Third, evidence classification separated direct evidence, indirect evidence, and conceptual support. Fourth, thematic

development grouped mechanism-related concepts into three analytical themes. The final themes were retained only when they addressed the review questions and offered an interpretive claim rather than a descriptive topic label.

Stage 3 developed mechanism-oriented themes. Drawing on reflexive thematic analysis, the review grouped extracted concepts into themes that explain psychological processes (Durepos et al., 2021). Methodological studies on thematic analysis and conceptual model development helped guide the movement from coded concepts to analytic themes (Byrne, 2022; Naeem et al., 2023).

Stage 4 integrated themes with digital painting affordances. For example, undo/redo, layers, versioning, and online sharing were examined in relation to emotion regulation, agency, self-narrative, and therapeutic communication. The goal was to clarify plausible mechanism links without presenting them as verified clinical effects.

To avoid overinterpretation, evidence was classified into three levels. Direct evidence refers to studies on digital art-making, digital drawing, online art therapy, or digital art therapy in which active visual creation is central. Indirect evidence refers to adjacent studies on traditional art therapy, creative arts therapy, telehealth arts therapies, VR art therapy, EEG-based art therapy, digital visual art learning, and digital mental health. Conceptual support refers to art therapy theory, digital affordance theory, and clinical or ethical discussions.

Themes were retained only when they offered more than a topic label and supported an analytic claim about how DPBAT may work. This follows Braun and Clarke's view that a theme should reflect a meaningful pattern and interpretive claim rather than a simple category (Braun & Clarke, 2023).

To make the use of evidence more transparent, the 35 core analytical sources were classified according to evidence type and relevance to the three research questions. Each source was coded as Direct Evidence, Indirect Evidence, or Conceptual Support. It was also mapped to one or more research questions according to its function in the review. Direct Evidence refers to studies directly addressing digital art-making, digital drawing, online art therapy, or active digital visual creation in relation to mental health. Indirect Evidence refers to adjacent studies on traditional art therapy, creative arts therapy, telehealth arts therapies, VR or EEG-based art therapy, digital visual art learning, or digital health. Conceptual Support refers to sources used for theoretical grounding, review methodology, ethical governance, or conceptual boundary-setting. Foundational art therapy texts added for theoretical support were cited in the manuscript but were not treated as DPBAT-specific clinical evidence.

Table 3. Evidence Classification of the Core Analytical Sources

Evidence type	Number of sources	Definition	Main RQ relevance	Representative sources	Function and limits
Direct Evidence	5	Studies directly addressing digital art-making, digital drawing, online art therapy, or active digital visual creation in relation to mental health.	RQ1, RQ2, RQ3	Gallo et al. (2025); Oruç et al. (2025); Xie (2025); Li et al. (2026); Zubala et al. (2021)	Used to support claims about digital visual creation, emotional expression, anxiety, engagement, online delivery, and therapeutic experience. The evidence remains limited and heterogeneous.
Indirect Evidence	15	Studies from adjacent fields, including traditional art therapy, creative arts therapy, telehealth arts therapies, VR or EEG-based art therapy, digital visual art learning, and digital health.	RQ2, RQ3	Bellaiche et al. (2025); Ben-David et al. (2025); Braito et al. (2022); Reitere et al. (2024); Wu et al. (2025); Uno et al. (2025); Wang et al. (2025)	Used to clarify mechanisms such as emotion regulation, therapeutic relationship, embodiment, attention, and clinical context. These sources are not treated as direct evidence of DPBAT effectiveness.
Conceptual Support	15	Sources used for theoretical grounding, narrative review method, qualitative synthesis, digital mental health ethics, user autonomy, and conceptual boundary-setting.	RQ1, RQ3	Sukhera (2022a, 2022b); Page et al. (2021); Dhollande et al. (2021); Flemming and Noyes (2021); Hopkin et al. (2024); Bapat and Jog (2025); Löchner et al. (2025)	Used to support methodology, evidence classification, digital ethics, and conceptual framing. These sources support interpretation but do not establish clinical effectiveness.
Overall use of evidence	35	The review combines direct evidence, indirect evidence, and conceptual support with explicit caution.	RQ1, RQ2, RQ3	Full source-level mapping is provided in Supplementary Table B.	The framework is a preliminary analytical model for future empirical testing, not a validated causal model.

3. Conceptualizing Digital Painting-Based Art Therapy

The core of art therapy is not the use of materials alone, but psychological support through visual expression, the creative process, and the therapeutic relationship. Traditional art therapy emphasizes material tactility, bodily movement, manual traces, and the artwork as a shared object. Digital art therapy changes these conditions by introducing screens, interfaces, digital storage, online communication, and software-based image manipulation.

VR art therapy illustrates how digital media can extend therapeutic space and embodiment. Hacmun et al. (2021) found that VR-based art-making changes therapeutic space, embodiment, and the art-making experience (Hacmun et al., 2021). This review uses such studies as conceptual support, while keeping its core focus on two-dimensional digital painting and active digital image-making.

3.1 Theoretical Foundations from Art Therapy

DPBAT draws on established art therapy assumptions rather than on digital technology alone. Its therapeutic logic begins with the basic premise that image-making can give form to experiences that are not easily organized through verbal expression. Naumburg’s dynamically oriented art therapy treats image-making as symbolic speech through which internal experience can become visible and discussable. From this view, the image is not only an aesthetic product, but also a medium through which feelings, memories, conflicts, and self-related meanings can be externalized and brought into therapeutic dialogue. Kramer’s art as therapy emphasizes the healing value of the creative process and the transformation of difficult impulses through artistic form. This perspective is especially relevant to DPBAT because digital painting still requires selection, composition, revision, and symbolic organization. The client does not merely operate a device. The client works through visual decisions that can carry emotional and relational meaning. These perspectives support the view that digital painting becomes therapeutically meaningful only when it is situated within expressive process, symbolic work, and a therapeutic relationship (Naumburg, 1966; Kramer, 1971).

The Expressive Therapies Continuum further clarifies how media properties, sensory and kinesthetic engagement, affective and perceptual processing, and cognitive or symbolic meaning-making shape art therapy intervention (Kagin & Lusebrink, 1978; Hinz, 2019). This framework is useful because it prevents DPBAT from being reduced to software functions. Digital painting changes the material conditions of art-making, but it does not remove the role of body, perception, affect, and meaning. Stylus movement, screen touch, visual feedback, layers, and reversibility become digital media conditions that may support regulation, choice, and symbolic organization. For example, the layer function can allow clients to separate, hide, return to, or reorganize emotional material. The undo and redo functions may reduce the fear of irreversible mistakes and make experimentation less threatening. Instant visual feedback can help clients observe the relation between action and image, while digital storage allows earlier versions of the artwork to remain available for later reflection.

Therefore, the mechanisms reviewed below should be read as digitally mediated extensions of art therapy theory. Digital affordances become clinically relevant only when they support externalization, emotion regulation, agency, self-narrative, and therapist-client communication. In this sense, DPBAT should not be understood as a separate theory created by digital technology. It is better understood as a media-specific development of art therapy practice. Its psychological value depends on how digital tools are embedded in the therapeutic frame, how clients use them to shape visual expression, and how therapists help clients reflect on both the image and the process of making it. This also means that the same digital function may have different therapeutic meanings in different contexts. A hidden layer may indicate avoidance, privacy, experimentation, or a need for control. Repeated erasing may show frustration, careful revision, or a search for safer expression. The clinical task is to understand these digital operations as part of the client’s expressive and relational process, rather than as neutral technical actions.

3.2 Defining Digital Painting-Based Art Therapy

To avoid conceptual overgeneralization, this review defines DPBAT as an art therapy or structured psychosocial support practice in which individuals actively create digital images through tablets, computers, styluses, drawing software, mobile applications, or online creative platforms. The defining feature is active digital visual creation for emotional expression, regulation, self-reflection, agency, and therapeutic communication.

The term is used narrowly. DPBAT is not synonymous with digital art therapy as a whole, online therapy, VR art therapy, or general digital mental health intervention. A practice is included only when the client actively participates in image-making and when the image-making process is linked to therapeutic or psychosocial aims.

Table 4. Conceptual Boundary of Digital Painting-Based Art Therapy

Concept	Whether Included in Core Discussion	Rationale
Tablet-based drawing	Yes	It represents a typical form of active digital visual creation, in which individuals actively generate images through a tablet and drawing software.
Stylus-mediated painting	Yes	It is directly related to Digital Painting and emphasizes the interaction among hand movement, visual feedback, and image generation.
Digital sketching	Yes	It is a basic form of digital painting and can be used for emotional sketching, self-expression, and therapeutic visual recording.
Layered visual composition	Yes	It is closely related to layer functions, version saving, and visual narrative, and is an important object of mechanism discussion in this article.

Digital collage	Partially included	It is included as a relevant form only when it involves active visual selection, combination, modification, and meaning-making; if it is merely decorative editing, it is not treated as core evidence.
Online art therapy	Partially included	It is included only when visual creation is the core part of the therapeutic process; if the online platform merely serves as a delivery channel for therapy, it is not part of the core discussion.
Telehealth arts therapies	Partially included	It can serve as supporting literature for the context of remote art therapy, but it is directly related to the core object of this article only when it includes active image-making.
VR art therapy	Used as conceptual support	It is an important form of Digital Art Therapy, but its spatial immersion and three-dimensional interaction differ from two-dimensional Digital Painting; therefore, it is mainly used to support the discussion of technology-mediated environment and embodiment.
EEG-based art therapy	Used as conceptual support	It can be used to explain the relationship among art-making, feedback technology, and psychological states, but its core is not digital painting, so it is not treated as core evidence.
Digital mental health app	Generally excluded	If it only involves psychoeducation, self-monitoring, chatbot use, or symptom tracking, without an image-making or art-making process, it does not fall within the scope of this article.
AI-generated image	Not treated as core evidence	If the practice mainly involves prompt input and output selection, with insufficient active image generation by the individual, it is not equivalent to Digital Painting-Based Art Therapy; it is mentioned only when discussing future research and ethical boundaries.
Creative arts therapy	Used as background support	It can be used to explain the general psychological mechanisms of art therapy, but because it includes music, dance, drama, and other forms, it is not directly equivalent to digital painting-based art therapy.

DPBAT differs from general digital mental health interventions, which often focus on psychoeducation, symptom monitoring, chatbots, cognitive training, or online counselling without active image-making. It also differs from purely recreational digital drawing or digital art education, where the primary aim is skill acquisition or entertainment rather than psychological support.

In practice, DPBAT may include tablet-based drawing, digital sketching, stylus-mediated painting, layered visual composition, app-based therapeutic drawing, and online guided art-making. It may also include digital collage when selection, modification, and meaning-making are central. Recent qualitative work on digital art therapy experiences supports the need to attend to embodied interaction and subjective meaning in digital creation (Xie, 2025).

The key media affordances of DPBAT are editability, reversibility, layered structure, instant visual feedback, storability, and shareability. These affordances are clinically relevant because they may change how clients approach mistakes, emotional intensity, privacy, continuity, and communication. Broader digital arts and health research also suggests that digital visual practices should be examined through both health and media-specific perspectives (Xue et al., 2022).

In this sense, DPBAT is a technology-mediated art therapy practice centred on active digital visual creation. Its value should be explained through psychological and relational mechanisms, not through the mere presence of digital devices.

3.3 Technology-Mediated Visual Creation

Technology-mediated visual creation refers to a process in which visual expression is co-produced by the user, body, interface, software affordances, visual feedback, and therapeutic context. It is useful for DPBAT because the image is shaped not only by inner experience, but also by the operations and constraints of the digital medium.

This concept avoids two misunderstandings. Tool-reductionism treats digital painting as a direct substitute for paper and paint. Technology-determinism assumes that digital functions automatically produce therapeutic benefit. DPBAT requires a middle position: digital affordances matter, but they become therapeutic only through guided creative process and relational context.

Technology-mediated visual creation also preserves bodily experience. Although digital painting reduces material tactility, hand movement, stylus pressure, screen touch, gesture control, and visual attention still participate in image-making. Therapists therefore need to understand not only what clients draw, but also how they revise, erase, hide, save, and share the image.

In summary, technology-mediated visual creation connects traditional art therapy processes, such as symbolic externalization and emotional regulation, with interface interaction, feedback, storage, and the data environment.

4. Psychological Mechanisms in Digital Painting-Based Art Therapy

Building on the definition above, this chapter reviews the psychological mechanisms through which DPBAT may support mental health. The review does not claim that digital painting automatically produces therapeutic outcomes. Rather, it examines how digital affordances may shape visual creation, and how this process may support emotion regulation, agency, psychological safety, self-narrative, and therapeutic communication.

The mechanisms discussed here mainly concern active image generation, including tablet-based drawing, stylus-mediated painting, digital sketching, and layered visual composition. Studies on VR art therapy, EEG-based art therapy, and broader digital mental health technologies are used only when they clarify digital media, bodily feedback, immersive experience, or ethical boundaries (Hadjipanayi et al., 2023).

Existing research links art-making with emotion regulation, anxiety reduction, psychological well-being, and self-reflection. Bellaiche et al. (2025) found that painting reduced anxiety more selectively than a non-creative control task, suggesting that art-making has effects beyond general task distraction (Bellaiche et al., 2025).

The DPBAT Psychological Mechanism Framework is presented here as a preliminary analytical framework. It organizes existing and adjacent evidence rather than proving a causal model. The framework explains how digital affordances may shape technology-mediated visual creation, which may then support specific psychological mechanisms and possible mental health outcomes.

Evidence is interpreted cautiously. Direct evidence comes from studies on digital art-making, digital drawing, online art therapy, or digital art therapy centred on visual creation. Indirect evidence comes from adjacent fields. Conceptual inference is used only to explain plausible links between digital painting functions and psychological processes.

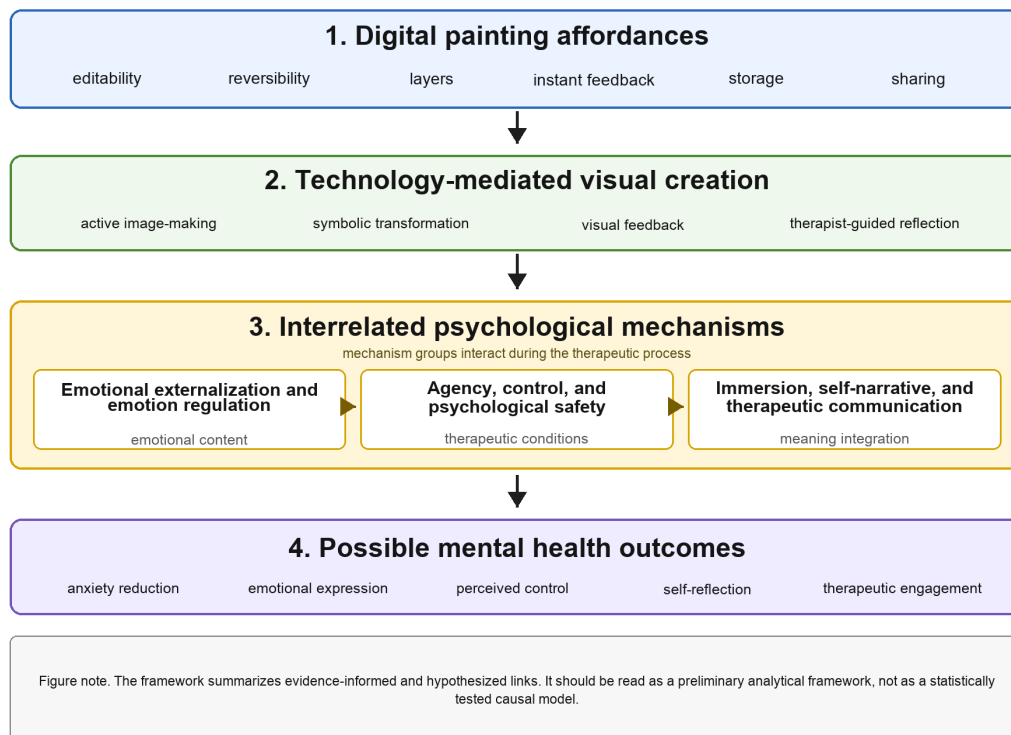


Figure 1. Digital Painting-Based Art Therapy Psychological Mechanism Framework

As shown in Figure 1, the framework has four levels: digital painting affordances, technology-mediated visual creation, interrelated psychological mechanisms, and possible mental health outcomes. The three mechanism groups are not isolated. Psychological safety can enable emotional externalization; externalized images can become materials for self-narrative and therapeutic dialogue; and therapeutic dialogue can reshape regulation and agency. The model is therefore interactive and cyclical rather than a simple linear chain.

4.1 Emotional Externalization and Emotion Regulation

Emotional externalization is a foundational mechanism of DPBAT. For clients who struggle to verbalize anxiety, stress, trauma, or distress, digital painting can turn internal experience into visible forms through colour, line, shape, symbol, and composition. Layers, opacity, erasing, undo/redo, and version saving allow emotional content to be hidden, revealed, adjusted, or revisited. Externalization is therefore not a one-time image product, but a modifiable process of observation and reorganization.

Evidence status: Evidence for emotional expression and well-being is partly supported by direct studies on digital art-making and online art therapy. However, claims about layers, opacity, undo/redo, and version saving as mechanisms of emotional regulation remain conceptual inferences. These claims should be understood as plausible DPBAT-specific hypotheses that require empirical testing rather than as established therapeutic effects (Haeyen & Noorthoorn, 2021).

Digital painting may support emotion regulation through three processes. First, it can redirect attention toward brushstrokes, colours, composition, and image change. Bellaiche et al. (2025) show that painting has a selective effect on anxiety reduction. Second, it can support visual cognitive reappraisal by allowing clients to resize, move, divide, soften, or reorganize threatening symbols. Third, it can enable expressive modulation when emotions are difficult to name verbally.

The distinctiveness of digital painting lies partly in reversibility. Undo/redo reduces the perceived cost of mistakes and may lower failure anxiety. Wu et al. (2025) show that EEG-based art therapy was associated with changes in attention and relaxation, suggesting that visual feedback and bodily states may jointly participate in regulation. Although this does not prove a DPBAT effect, it supports attention to feedback processes in digital art-making.

A recent scoping review on digital art therapy among adults with cancer found that digital modalities, including visual and narrative forms, have been used to alleviate emotional distress, anxiety, and depressive symptoms, although evidence remains dispersed and heterogeneous (Li et al., 2026). This supports a cautious interpretation: DPBAT should be examined not only by symptom reduction, but also by how it enables emotional externalization, visual transformation, and regulation.

Emotional externalization and emotion regulation therefore form the first mechanism group. Editable, reversible, and layered media structures may make expression more exploratory and adjustable, and this process provides a basis for agency, self-narrative, and therapeutic communication.

4.2 Agency, Control, and Psychological Safety

The second mechanism group is agency, control, and psychological safety. Many forms of distress involve helplessness or reduced self-efficacy. DPBAT may provide a relatively safe creative space because clients can revise, pause, hide, save, or share images at their own pace. These claims remain possible pathways rather than verified clinical conclusions.

Evidence status: Evidence for agency, control, and therapeutic relationship is mainly drawn from art therapy and digital health studies. The specific claim that undo/redo, layer control, hiding, saving, or selective sharing improves psychological safety in DPBAT remains under-tested. These functions are therefore discussed as plausible mechanisms, not as direct evidence of clinical effectiveness.

Agency appears in the small choices made during creation: when to start, pause, erase, keep, hide, save, or show an image. Ben-David et al. (2025) found that the therapist-client relationship and engagement with art-making are important factors in clients' experiences of change. This suggests that agency in art therapy is produced through interaction among creative process, relationship, and self-experience.

Control is supported by undo/redo, layers, zooming, copying, brush adjustment, and opacity control. These operations can help clients test difficult images without immediate exposure. Cotter et al. (2024) show that eHealth tools may influence autonomy, competence, and relatedness through navigability, interactivity, and customization. In DPBAT, tool choice, image adjustment, and control over sharing may similarly support autonomy and competence (Cotter et al., 2024).

Psychological safety is necessary for agency and control to have therapeutic value. Reversibility and privacy controls may reduce concerns about failure, evaluation, and exposure. Yet safety is not automatic. Digital artworks can be copied, uploaded, stored, or shared beyond the therapy setting. Hopkin et al. (2024) emphasize that digital mental health technologies require attention to safety, transparency, and risk governance. DPBAT must therefore be considered together with platform privacy, data security, and therapeutic boundaries (Hopkin et al., 2024).

4.3 Immersion, Self-Narrative, and Therapeutic Communication

The third mechanism group is immersion, self-narrative, and therapeutic communication. It concerns how digital painting organizes attention, supports meaning-making, and becomes a medium for dialogue. Instant visual feedback, hand-eye coordination, and interface interaction may support creative concentration. This should be understood as therapeutic attentional engagement, not entertainment-based engagement.

Evidence status: Evidence for attention, engagement, and therapeutic communication comes mainly from adjacent studies on digital art therapy, EEG-based art therapy, and digital mental health. The role of instant feedback, versioning, visual diaries, and online sharing in DPBAT remains a conceptual inference. Future case studies, intervention studies, and mixed-methods research are needed to examine these processes directly.

Studies on digital art therapy, EEG-based art therapy, and digital mental health provide partial direct or indirect evidence for attention, relaxation, engagement, and communication. However, claims that instant feedback produces flow, that versioning supports self-narrative, or that online sharing improves therapeutic communication remain conceptual inferences that require future case, intervention, and mixed-methods research.

In DPBAT, immersion may involve perceptual feedback from colour and line, action-based coordination among hand movement and screen response, and meaning-based investment in the developing image. Wu et al.'s (2025) study did not directly examine digital painting, but its findings on attention and relaxation suggest that art-making can involve a dynamic balance between focus and regulation.

Self-narrative is supported by storage, versioning, visual diaries, and layered composition. Clients can compare images across sessions, preserve stages of change, and use layers to represent different emotions, time periods, or parts of the self. Digital painting can therefore become a visual record of self-change rather than a single finished product.

Recent digital art therapy research indicates that digital visual, narrative, and immersive modalities can support emotional well-being and psychosocial adaptation (Li et al., 2026). For DPBAT, storability and revisitability give artworks continuing narrative value. They allow therapists and clients to identify emotional patterns, symbolic shifts, and changes in self-understanding.

Therapeutic communication is central because artwork often initiates dialogue rather than ending the intervention. Ben-David et al. (2025) emphasize the importance of the therapist-client relationship and engagement with art-making. In DPBAT, therapists can discuss not only what clients draw, but also why they hide a layer, undo a mark, save a version, or choose to share only part of an image.

Digital communication also has limits. Online sharing can improve accessibility, but may weaken bodily co-presence, material tactility, and the immediacy of a shared studio. Digital artworks are both psychological expressions and reproducible data objects. Cameron et al.'s (2025) umbrella review suggests that digital mental health effects depend on technology type, guidance mode, personalization, and user characteristics. DPBAT therefore depends on therapist support, client needs, and creative context, not on technology alone.

Immersion, self-narrative, and therapeutic communication form the third mechanism group. Digital painting may support creative concentration through feedback, self-narrative through stored versions, and dialogue through image sharing and meaning negotiation. Its specificity lies in the creative pathway that can be revisited, modified, and discussed.

In summary, DPBAT may support mental health through three interrelated mechanism groups. Emotional externalization and regulation make distress visible and modifiable. Agency, control, and psychological safety create conditions for low-risk expression. Immersion, self-narrative, and therapeutic communication support meaning-making and relational work. These are evidence-informed explanatory pathways, not verified causal chains.

4.4 Digital Media Affordances, Benefits, and Boundaries

Across the three mechanism groups, the positive therapeutic value of digital media lies in accessibility, reversibility, continuity, and communicability. DPBAT can lower material costs, support remote participation, reduce fear of mistakes through undo/redo, and use layers or version histories to make emotional change visible. These affordances are clinically meaningful when paired with therapist guidance, informed consent, and clear goals.

At the same time, digital media introduce risks of overexposure, data leakage, platform dependency, and weaker embodied co-presence. DPBAT should therefore be presented as adjunctive and context-sensitive psychosocial support rather than a stand-alone treatment. Its clinical value depends on population, task design, therapist competence, and platform governance.

5. Conclusion

This review clarified the conceptual boundary, theoretical grounding, and mechanism-related evidence of DPBAT in mental health contexts. DPBAT is distinguished from traditional material-based art-making, digital mental health apps, and online therapy without active image-making. Existing reviews indicate that art therapy has clinical value in child, adolescent, and mental health settings, but the evidence base remains limited by small samples, heterogeneous methods, and variable evidence strength (Braito et al., 2022; Versitano et al., 2025). The present review therefore treats DPBAT as a specific and under-tested research object. It organizes mechanism-related evidence into three interrelated groups: emotional externalization and emotion regulation; agency, control, and psychological safety; and immersion, self-narrative, and therapeutic communication. These pathways are analytically useful, but they should not be read as verified causal mechanisms. Related evidence from creative arts therapy and PTSD supports the value of non-verbal expression and emotional integration, while also showing that the field remains methodologically heterogeneous (Wang et al., 2025). DPBAT also requires clinical and ethical governance because digital artworks may contain private information about emotions, body, trauma, identity, and relationships. When stored or shared, they also become data objects. Digital mental health research emphasizes privacy, data security, transparency, accountability, informed consent, and access inclusion (Bapat & Jog, 2025; Löchner et al., 2025).

5.1 Clinical Boundaries and Risk Considerations

In clinical application, DPBAT is most appropriate as adjunctive psychosocial support for emotional expression, self-reflection, stress reduction, mild to moderate anxiety, and therapeutic engagement. It should not replace professional diagnosis, crisis intervention, or psychiatric treatment. In cases involving trauma disclosure, severe depression, psychosis, suicidal ideation, or crisis situations, therapists need assessment, containment, risk management, and referral protocols. Remote delivery also requires emergency contacts, session boundaries, data storage rules, guardian consent for minors, and clear artwork ownership and sharing rules.

Three contributions can be identified. First, the review defines DPBAT as a media-specific form of active digital visual creation rather than as a general category of digital therapy. Second, it links digital painting affordances with established art therapy theory, especially visual expression, symbolic externalization, creative process, and therapeutic relationship. Third, it organizes existing and adjacent evidence into a preliminary framework that can guide future qualitative research, case studies, intervention design, and clinical-ethical discussion.

Several limitations should be noted. This is a narrative synthesis rather than a systematic review, scoping review, or meta-analysis. Although PRISMA-informed reporting elements were used to improve transparency, the review does not claim exhaustive coverage of all relevant literature. The framework is explanatory and preliminary, not a validated clinical causal model. Direct empirical studies on DPBAT remain limited, and many mechanism-related claims rely on adjacent evidence from art therapy, digital health, human-computer interaction, and creative arts therapy.

Future research should examine four issues: clients' experiences of agency, control, emotion regulation, and self-narrative in digital painting; the effects of layers, undo/redo, versioning, and sharing on therapeutic processes; therapists' digital competence and boundary management; and ethical standards for storage, transmission, ownership, anonymization, informed consent, and platform use.

Overall, DPBAT is a promising but still developing research direction. Its value lies not in replacing traditional materials with screens, but in reorganizing emotional expression, creative control, self-narrative, and therapeutic communication through technology-mediated visual creation. The field now needs to move from conceptual description to empirical testing and from technological adoption to ethical governance.

Declarations

Ethics approval and consent to participate: Not applicable. This article is a narrative review and does not involve new human participants, clinical intervention, or primary data collection.

Informed consent: Not applicable.

Data availability: No new datasets were generated or analyzed in this review. All sources discussed in the article are publicly available through academic databases or publisher websites.

Conflict of interest

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