

Exploring the Art and Experiences of Painters with Epilepsy

Explorando a arte e as experiências de pintores com epilepsia

When I have a terrible need of - shall I say the word - religion. Then I go out and paint the stars.

Vincent Van Gogh

I dream of painting and then I paint my dream.

Vincent Van Gogh

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ABSTRACT

This narrative review addresses the world of artists who linked their creative journeys alongside their battles with epilepsy, a neurological condition engineered by recurrent epileptic seizures, with multifaceted implications in biopsychosocial domains. By examining the lives and works of celebrated artists such as Vincent Van Gogh and contemporary painters, particularly those possibly affected by epilepsy, a narrative transcends clinical elucidations, investigating historical contexts, artistic expressions, and therapeutic interventions. The focus is on uncovering the transformative influence of engaging in artistic activities for individuals struggling with epilepsy. It investigates the profound impact of artistic pursuits on people affected by epilepsy, showing the resilience of the human spirit in harnessing adversity as a source of creativity. This exploration illuminates the potential of art, not only as a means of self-expression, but also as a therapeutic medium in the setting of epilepsy and associated neurorehabilitation.

Keywords: Epilepsy, Art Therapy, Artists, Neurological Conditions, Creativity, Neurorehabilitation, Resilience

RESUMO

Esta revisão narrativa aborda o mundo dos artistas que associaram as suas jornadas criativas paralelamente às suas batalhas contra a epilepsia, uma condição neurológica caracterizada por ataques epilépticos recorrentes, com implicações multifacetadas em domínios biopsicossociais. Ao examinar as vidas e obras de artistas célebres como Vincent Van Gogh e pintores contemporâneos, particularmente aqueles possivelmente afetados pela epilepsia, a narrativa transcende as elucidações clínicas, investigando contextos históricos, expressão artística e intervenções terapêuticas. O foco está em desvendar a influência transformadora do envolvimento em atividades artísticas para indivíduos que lutam contra a epilepsia. Ele investiga o profundo impacto das atividades artísticas nas pessoas afetadas pela epilepsia, mostrando a resiliência do espírito humano ao aproveitar a adversidade como uma fonte de criatividade. Esta exploração ilumina o potencial da arte, não apenas como meio de autoexpressão, mas também como meio terapêutico no cenário da epilepsia e da neuroreabilitação associada.

Palavras-chave: Epilepsia, Arteterapia, Artistas, Condições Neurológicas, Criatividade, Neuroreabilitação, Resiliência

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INTRODUCTION

This article, the fourth in a seven-part series on neuroaesthetics and visual arts, is about the exploration of the representation of epilepsy in art, based on works by artists such as Vincent Van Gogh and contemporary painters that reveals a unique perspective on the experiences of people affected by neurological disorders.

Van Gogh's quotes presented at the beginning of this article illustrate the profound connection between his inner emotions and his art, and painting the stars during moments of spiritual need reflects how nature and art intertwined in his quest for solace and meaning, besides his dreamlike paintings were, in essence, a manifestation of his inner visions and aspirations.

However, the relationship between epilepsy and artistic production/creativity, despite expectations of a strong link between them, is known that a few renowned painters had epilepsy¹⁶. The historical context and artistic representations of epilepsy offer insights that transcend clinical descriptions, emphasizing the potential for art to play a significant role in therapy and neurorehabilitation.

The consequences of neurological disease on creativity

The artistic representation of epilepsy-related phenomena has been a topic in literature for a long time, often explored by epileptic writers like Dostoyevsky or by those who have observed seizures in others. However, the depiction of epilepsy by artists with the disease is a more recent trend. It was not until the 1990s that epilepsy became a declared source of inspiration for epileptic artists, notably through the experiences of Jennifer Hall as mentioned by Lambert¹¹.

Van Gogh's Enigmatic Disorder

Vincent van Gogh, figure 1, was a Dutch painter born on March 30, 1853, and died on July 29, 1890, and is one of the most celebrated creative artists of all time. His life and art continue to captivate scholars due to his special painting style, and speculated neurological or psychiatric conditions which remain a mystery to this day, and there are several debates surrounding his afflictions^{2,3,15}.

Van Gogh's art style is characterized by bold colors, expressive brushwork, and emotional intensity. He used these elements to convey his emotional and spiritual state rather than attempting to replicate reality accurately.¹⁷

During his life, van Gogh was influenced by various artistic movements and artists and was inspired by Impressionism and Post-Impressionism, particularly the works of artists like Claude Monet, Camille Pissarro, and Paul Gauguin. His time in Paris exposed him to Impressionist techniques and color theories.

Van Gogh's art, despite initially facing rejection and criticism during his lifetime, has had a profound impact on subsequent generations of artists. His emotionally charged

works and distinctive style have influenced numerous artists and movements, including Expressionism and Fauvism. He left behind an extraordinary legacy, inspiring artists well beyond his era.

Many historians believe that he suffered from epilepsy based on characteristics such as hypergraphia, atypical sexuality, and viscosity of thought, suggesting the possibility of the Gastaut-Geschwind phenomenon, a known complication of complex partial seizures (focal impaired consciousness). He was supposedly addicted to absinthe liquor, which is known to cause xanthopsia, and many authorities argue that this was the reason for his penchant for the deep, bright yellow color in many of his paintings. Regarding his illness, other hypotheses were raised such as Ménière's disease, bipolar disorder, heatstroke, and acute intermittent porphyria. He explores the potential influence of these conditions on his artistic vision, examining his bold colors, emotive brushstrokes, and the tumultuous nature of his artwork. Although discussions link his conditions to his intense style, attributing specific aspects of his art solely to medical conditions remains speculative. The complexity of his creative process likely resulted from a mix of personal experiences, artistic influences, and his distinct perspective. His letters to his brother Theo offer glimpses into his thoughts and struggles, but definitive evidence linking his medical conditions to his artistic choices remains elusive.

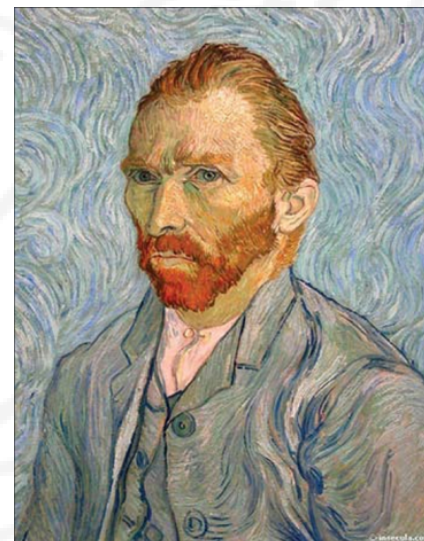


Figure 1. Self-portrait, 1889, Vincent van Gogh (1853–1890), oil on canvas, Musée d'Orsay, from Wikipedia.

Other Painters with Epilepsy and Artistic Representation of Epilepsy

In addition to Van Gogh, this section features lesser-known painters living with epilepsy. His diverse experiences and artistic styles present a rich expression of creative responses to the condition. Despite the challenges of finding documentation about these artists, their works highlight the broad spectrum of artistic talents influenced

by epilepsy. Notable figures like Jennifer Hall exemplify this, demonstrating competence and artistic talent. However, due to limited documentation and recognition, detailed information about these artists may require more active and specialized investigation.

The story of resilience in people who have been diagnosed with epilepsy is remarkable, as in the case of Sir Kyffin Williams (1918-2006), a renowned Welsh painter whose artistic pursuits were precipitated by this disease. Initially pursuing a military career, Kyffin suffered seizures, which led a neurologist to suggest he dedicate himself to art. Despite his doubts, he enrolled at the Slade School of Fine Art, becoming a distinguished painter, known for his depictions of Welsh landscapes and people. His art resonated deeply with locals and gained national recognition, highlighting the transformative power of channeling personal challenges into creative pursuits⁷.

Jennifer Hall, an artist with epilepsy and director of an artistic experimentation center in Boston, has put together an exhibition highlighting the work of twenty-seven painters with epilepsy, visually and visually exploring convulsive experiences and hallucinations associated with epilepsy. Hall herself uses performances like "Out of The Body Theater" to objectify these intense experiences, using automatons, digital animation, projections, and other tools to communicate experiences she cannot verbalize during a crisis.

More recently, individuals like Zach Beckemeyer are using art not only as a means of personal expression but also as a platform to raise awareness about epilepsy¹³. His trajectory, marked by surgeries and subsequent relearning of basic functions, shows the resilience and strength of those who live with neurological disorders. Beckemeyer's ability to channel his experiences into his art not only serves as a therapeutic outlet for him but also communicates a profound message to others. Her journey from diagnosis to surgeries and subsequent seizure-free period reflects a triumph of resilience and the human spirit. It is proof of the transformative power of art and overcoming personal challenges. Art exhibitions like these not only showcase the talent and creativity of individuals like Beckemeyer, but they also play a crucial role in promoting empathy, understanding, and support for those affected by epilepsy. They offer a platform for dialogue and awareness, ultimately contributing to a more inclusive and informed society.

These artistic works offer a unique and deeply personal insight into epilepsy-related experiences, highlighting how epileptic seizures can inspire and inform artistic creation, while also exploring the limits of communicating these intense experiences.

Finkelstein et al., apud Schott, 2012¹⁶, presented a unique case of a mosaic artisan not previously known for artistic activity, diagnosed with left frontotemporal epilepsy based on clinical characteristics, EEG, SPECT images, and neuropsychological evaluation. During noncommunicative,

aimless, and sometimes aggressive episodes lasting 40 minutes of sleep, this patient began to draw impulsively, demonstrating remarkable skill even during these attacks. The authors suggested that intact right hemisphere functions during a depression that spreads to the left hemisphere may lead to impulsive artistic creativity—a potential "release phenomenon" of the complex visuospatial abilities of the right hemisphere.

Carrizosa-Moog et al.⁵ recognized that to date several professional artists and patients with epilepsy have described the disease through different forms of art, such as painting, sculpture, dance, etc., and the feelings and thoughts of those with seizures have been appreciated and reviewed in several articles demonstrating how art could display emotional, social and cultural aspects that other methods were not capable of. Art has been used as an expression of what cannot be said in words, as a healing instrument, and as a strategy for better empathy between patients, doctors, and society. Epilepsy researchers and specialists at LASSE XIII pictorially represented the feelings or challenges of persons with epilepsy, thus giving a multifaceted view of them⁵. These insights go beyond clinical descriptions, offering different perspectives on the experiences of individuals living with epilepsy. Themes of identity schism, loss of control, and complexity of the condition emerge in these artworks, reflecting the emotional, social, and clinical dimensions of epilepsy.

Neuroaesthetic Principles and Neurorehabilitation

Art therapy serves as a form of psychotherapy where art becomes a tool for healing and self-expression and trained art therapists guide patients, helping them create art to aid in emotional, psychological, and physical healing which is very important in epilepsy which is a bio-psycho-social disease^{4,18}. This approach is especially valuable for individuals who find verbal expression challenging, and art therapy offers a safe space for nonverbal emotional expression being practiced in a variety of settings, including medical, psychiatric, educational, and social work. Visual art can serve as a preferred method of communication, especially for highly creative individuals, providing a safer avenue for emotional expression. Although research indicates the potential of art therapy in managing psychosocial challenges associated with epilepsy, its use remains limited. However, it holds promise in helping patients deal with the complexities surrounding epilepsy or psychogenic non-epileptic seizures (PNES). By allowing nonverbal expression, art therapy can reveal subconscious emotions and thoughts, helping patients understand their condition and improving coping mechanisms. Furthermore, artistic expression can reveal distinctions in the subconscious experiences of epilepsy and PNES, similar to insights derived from conversation analysis.

The neuroscientific foundations of art therapy elucidate the multi faceted mechanisms through which

creative engagement positively influences neurological and emotional states. This covers the intricate neural tracts associated with creativity, shedding light on how the act of painting stimulates these pathways, thereby increasing cognitive flexibility and imaginative thinking. Emotional processing is also a key aspect, where artistic expression facilitates the interpretation and processing of emotions linked to the experiences of living with epilepsy. Furthermore, the therapeutic benefits of art extend to reducing stress, triggered by the meditative and calming aspects of the creative process. Through painting, individuals immerse themselves in a state of focused attention, promoting mindfulness that alleviates the stress and anxiety associated with epilepsy. Sensory stimulation derived from the tactile experience of painting and visual engagement with colors and shapes further amplifies this therapeutic effect, providing a rich sensory environment conducive to emotional release and relaxation. The neurological concepts of mirror neurons and empathy find resonance in art therapy, where creating or viewing art generates a shared emotional experience, promoting empathy and connection. This shared emotional resonance cultivates a sense of understanding and support, forming a vital component in the emotional rehabilitation of individuals navigating the complexities of epilepsy. Furthermore, the neuroplasticity of the brain is harnessed through art therapy, and practicing painting exercises the brain, promoting neural adaptation and flexibility. This process supports cognitive functions and problem-solving abilities and increases resilience to deal with the challenges posed by epilepsy. In summary, art therapy, particularly painting, is a multifaceted intervention that leverages neuroaesthetic principles to provide a holistic approach to the treatment of epilepsy. By integrating the intricate neuroscientific aspects with the expressive potential of art, this therapeutic modality offers individuals living with epilepsy a transformative journey toward self-discovery, emotional healing, and improved well-being.

Consequently, advances in the field of neuroscience can support best practices in art therapy, having a clear rationale for its practice¹⁰. The relevant neuroscientific basis for art therapy encompasses several crucial elements, such as the neural tracts of creativity; Emotional processing; Stress reduction and relaxation; Sensory stimulation; Mirror neurons and empathy; Reward paths; Cognitive functions: Problem solving, in addition to Neuroplasticity^{1,6,8,9,12}.

Understanding how creativity is processed in the brain involves exploring neural networks responsible for creative thinking, ideation, and imaginative processes. These tracts engage regions of the brain, emphasizing the interconnection of various brain areas to facilitate creative thought and expression.

The brain's mechanisms for processing emotions play a key role in art therapy. Exploring how emotions are perceived, interpreted, and expressed neurologically

provides insights into how art can serve as a medium for emotional exploration and regulation.

Art therapy, especially painting, involves neural pathways associated with relaxation and stress reduction. This includes examining the brain regions implicated in mediating stress responses and understanding how artistic engagement can modulate these responses, promoting a state of relaxation and calm.

Sensory experiences derived from involvement in art, such as the tactile sensation of paint on canvas and the visual perception of colors and shapes, activate neural pathways linked to sensory processing. These sensory stimulations contribute to the therapeutic effects of art, involving various sensory regions of the brain.

The concept of mirror neurons, which fire when an individual performs an action and also observes another person performing the same action, supports empathy and shared emotional experiences. Art, as a means of expression and communication, involves these mirror neuron pathways, promoting empathy and emotional connection between individuals.

The brain's reward pathways, involving neuro transmitters like dopamine, play a role in reinforcing positive experiences. Creating art can activate these reward systems, contributing to feelings of accomplishment, pleasure, and motivation, thus reinforcing engagement in the creative process.

Art therapy involves cognitive functions related to problem-solving, creative thinking, and decision-making. It engages regions of the brain associated with executive functions, allowing individuals to navigate artistic challenges and express their ideas effectively.

This fundamental concept of neuroplasticity refers to the brain's ability to adapt, reorganize, and form new neural connections throughout life. Art therapy, by engaging the brain in creative endeavors like painting, harnesses neuroplasticity to facilitate learning, emotional processing, and adaptive changes in response to neurological conditions like epilepsy.

Understanding these neuroscientific elements provides a comprehensive framework for appreciating how art therapy, particularly through painting, influences neurological processes, emotional states, and cognitive functions, contributing to the holistic well-being of individuals, including those living with epilepsy. However, despite the potential of the arts to increase the cognitive and emotional engagement of patients in urgent need of neurorehabilitation, taking into account neuroaesthetic principles, there is a gap between the various protocols and the rigorous findings from the study of neuroaesthetics¹⁴.

Figure 2 summarizes the relevant neuroscientific basis for art therapy, providing a visual demonstration of art therapy's transformative role in navigating the complexities of epilepsy. This convergence between art and neurological conditions not only broadens our perspectives but also highlights the immense potential of art in promoting

resilience, expression, and healing for those affected by epilepsy.



Figure 2. The neuroscientific basis relevant to Art Therapy is symbolically represented by simulated Van Gogh's paintings. Source: Image Creator of the DALL-E platform with recommendations given by the author of this paper.

CONCLUSIONS

This narrative journey about Van Gogh's enigmatic disorder to that of lesser-known painters with possible epilepsy highlights their artistic talent. It reveals contemporary interpretations that transcend clinical limits and the multifaceted nature of this condition. Furthermore, the comprehensive exploration of the neuroscientific foundations of art therapy demonstrates its transformative capacity in the treatment of epilepsy. Thus, the elucidation of neuroaesthetic principles illustrates how art therapy harnesses neural mechanisms linked to creativity, emotional processing, stress relief, sensory engagement, empathy, cognitive enhancement, and neuroplasticity. Understanding these intricate elements illuminates the multifaceted ways in which art therapy, particularly through painting, contributes holistically to the well-being of individuals affected by epilepsy.

REFERENCES

- De Pisapia N, Bacci F, Parrott D, Melcher D. Brain networks for visual creativity: a functional connectivity study of planning a visual artwork. *Scientific reports*, 2016;6(1): 39185.
- Bhattacharyya KB, Rai S. The neuropsychiatric ailment of Vincent Van Gogh. *Ann Indian Acad Neurol*. 2015;18(1):6-9.
- Britannica, The Editors of Encyclopaedia. "Vincent van Gogh". *Encyclopedia Britannica*, 17 Nov. 2023, <https://www.britannica.com/biography/Vincent-van-Gogh>.
- Brown SE, Shella T, Pestana-Knight E. Development and use of the art therapy seizure assessment sculpture on an inpatient epilepsy monitoring unit. *Epilepsy Behav Case Rep*. 2017;9:6-9.
- Carrizosa-Moog J, Mameniškienė R, Puteikis K. Painting epilepsy - The essence of disease by participants of the Latin American Summer School on Epilepsy (LASSE XIII). *Epilepsy Behav*. 2020;104(Pt A):106878.
- Chu B, Marwaha K, Sanvictores T, et al. Physiology, Stress Reaction. [Updated 2022 Sep 12]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2024 Jan-. Available at: <https://www.ncbi.nlm.nih.gov/books/NBK541120/>
- Griffin JP. Epilepsy-the making of a painter: Sir (John) Kyffin Williams. *Clin Med (Lond)*. 2010;10(1):91-92.
- Jeon H, Lee SH. From neurons to social beings: Short review of the mirror neuron system research and its socio-psychological and psychiatric implications. *Clinical Psychopharmacology and Neuroscience*, 2018;16 (1):18–31.
- Kamali A, Milosavljevic S, Gandhi A, Lano KR, Shobeiri P, Sherbaf FG, Hasan KM. The Cortico-Limbo-Thalamo-Cortical Circuits: An Update to the Original Papez Circuit of the Human Limbic System. *Brain Topography*, 2023;1-19.
- King JL, Kaimal G, Konopka L, Belkofer C, Strang CE. Practical applications of neuroscience-informed art therapy. *Art Therapy* 2019;36(3):149-156.
- Lambert HP. «Littérature, Arts visuels et Neuroesthétique», *Épistémocritique*, vol. 2, hiver 2008. Available at: <https://epistemocritique.org/litterature-arts-visuels-et-neuroesthetique/>.
- Lewis RG, Florio E, Punzo D, Borrelli E. The Brain's Reward System in Health and Disease. *Adv Exp Med Biol*. 2021;1344:57-69.
- Nguyen L. Artists bring "hidden truths" of epilepsy to light in art exhibition at Marina Park. Available at: <https://www.latimes.com/socal/daily-pilot/news/story/2022-09-24/artists-bring-hidden-truths-of-epilepsy-to-light-in-art-exhibition-atmarina-park>.
- Oliva A, Iosa M, Antonucci G, De Bartolo D. Are neuroaesthetic principles applied in art therapy protocols for neurorehabilitation? A systematic mini-review. *Front Psychol*. 2023;14:1158304.
- Roberts CS. The conscience of Vincent Van Gogh. *Proc (Bayl Univ Med Cent)*. 2010;23(1):31-32.
- Schott GD. Pictures as a neurological tool: lessons from enhanced and emergent artistry in brain disease. *Brain*. 2012;135(Pt 6):1947-1963.
- Sen M, Honavar SG. The Eye in the Artist. *Indian J Ophthalmol*. 2022;70(9):3182-3187.
- Smallwood E, Legari S, Sheldon S. Group art therapy for the psychosocial dimension of epilepsy: A perspective and a preliminary mixed-methods study. *Canadian Journal of Counselling and Psychotherapy*, 2020;54(3):286-323.