

Migraine as a Source of Artistic Inspiration

Enxaqueca como fonte de inspiração artística

Presiding over the entire attack there will be, in du Bois Reymond's words, 'a general feeling of disorder,' which may be experienced in either physical or emotional terms, and tax or elude the patient's powers of description.'

Oliver Sacks, Migraine

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ABSTRACT

This narrative review explores the intricate relationship between migraines and art, tracing historical examples and contemporary interpretations of how migraines, especially those with a visual aura, have influenced artists. Highlights how migraines may have shaped artistic inspiration, delving into notable, questionably migraine-infected figures such as Hildegard of Bingen, Giorgio de Chirico, Pablo Picasso, and Salvador Dali, examining how their experiences may have influenced their works. Furthermore, it addresses the emergence of 'migraine art' sponsored by the pharmaceutical industry, presenting the intersection between art, neuroscience, and public engagement. The diagnostic complexity and differentiation of migraines from epilepsy are also discussed, with a special focus on the symptoms of the visual aura and how this has been portrayed through various artistic representations, thus inviting further exploration of the relationship between neurological conditions and creative expression.

Keywords: Migraine Disorders, Art, Visual Phenomena, Aura, Art History, Creative Expression, Pharmaceutical Industry

RESUMO

Esta revisão narrativa explora a intrincada relação entre enxaquecas e arte, traçando exemplos históricos e interpretações contemporâneas de como as enxaquecas, especialmente aquelas com aura visual, influenciaram os artistas. Destaca como as enxaquecas podem ter moldado a inspiração artística, investigando figuras notáveis e questionavelmente infectadas pela enxaqueca, como Hildegard de Bingen, Giorgio de Chirico, Pablo Picasso e Salvador Dali, examinando como suas experiências podem ter influenciado suas obras. Além disso, aborda o surgimento da "arte da enxaqueca" patrocinada pela indústria farmacêutica, apresentando a intersecção entre arte, neurociência e envolvimento público. A complexidade diagnóstica e a diferenciação entre enxaquecas e epilepsia também são discutidas, com especial foco nos sintomas da aura visual e como esta tem sido retratada através de diversas representações artísticas, convidando assim a uma maior exploração da relação entre condições neurológicas e expressão criativa.

Palavras-chave: Transtornos de Enxaqueca, Arte, Fenômenos Visuais, Aura, História da Arte, Expressão Criativa, Indústria Farmacêutica

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INTRODUCTION

This article, the seventh in a seven-part series on neuroaesthetics and the visual arts, sheds light on the intricate relationship between migraine and art, investigating historical examples and contemporary interpretations of how the visual experiences that accompany migraine may have manifested in the works of many artists.

The quote from Oliver Sacks at the beginning of this article gives an idea of the migraineur's overwhelming experience, of an intricate balance between physical and emotional turmoil, leaving those affected with difficulty conveying the complexity of their migraine attacks. However, the link between neurological disorders and artistic expression has long fascinated scholars and enthusiasts in the field of art history. In addition to dreams, hypnagogic hallucinations, or drug-induced phenomena, migraine can also be a source of artistic inspiration¹.

Chatterjee² in his review on 'The neuropsychology of visual artistic production' considers that several neurological conditions influence artistic expression and the unique talents of artists allow them to portray these deficits remarkably. Among neuropsychological syndromes, migraine auras inspire surreal works of art, and analyses from the Migraine Art Competition show how artists incorporate personal visual experiences into their work. Thus, although in principle neurological conditions may not create artistic talent, they expand artists' visual forms, leading to unexpected and visually intriguing changes in their art.

Migraine, often characterized by complex visual phenomena, has silently but profoundly influenced numerous artists throughout history, shaping their creative expressions and artistic motifs exemplarily in Hildegard of Bingen, Giorgio de Chirico, Salvador Dalí, and perhaps Pablo Picasso^{1,6,7}. Furthermore, this article aims to explore not only the historical context but also the contemporary emergence of 'migraine art' supported by exhibitions and competitions sponsored by the pharmaceutical industry, which sits at the intersection of art, neuroscience, and public engagement. Thus, by examining the conscious or subconscious integration of migraine experiences into artistic expressions, this study seeks to unravel the captivating relationship between neurological conditions and the imaginative world of art.

Visual aura

Although epilepsy has attracted considerable attention for its influence on artistic creation, the widespread impact of migraine, particularly that accompanied by visual aura, has remained a relatively understudied but compelling subject. However, the intertwined relationship between migraine and epilepsy reveals complex connections³ and clinically distinguishing

between them can be challenging due to overlapping symptoms. Postictal headache is common, while the diagnosis of ictal epileptic headaches is more complex. The pathophysiology of seizure-triggered headaches and the similarity between migraine aura and epilepsy symptoms, especially visual aura, contribute to incorrect diagnosis. Furthermore, both migraine with aura and epilepsy can coexist, and the differential diagnosis between migraine with visual aura and occipital epilepsy depends on specific clinical characteristics. Migraine aura often presents with several visual symptoms, including bright lights, spots, blurred vision, zigzag lines, and scotomas. Notably, the duration of visual symptoms differs significantly as in epilepsy it lasts from seconds to minutes, whereas migraine aura lasts from 5 to 60 minutes. A distinctive indicator is the stereotypical lateralization and horizontal shift of visual symptoms in epilepsy, contrasting with the more heterogeneous presentation in migraine aura. Furthermore, migraine aura usually has a gradual onset, epilepsy has a sudden onset. Colored aura can also appear in both, but other associated symptoms such as migraine characteristics such as nausea, vomiting, or sensitivity to light and sound can help differentiate, but postictal headaches after epilepsy can mimic migraines.

Oliver Sacks (1933-2015), British neurologist, naturalist, historian of science and writer, also a migraine sufferer, wrote about the nature of visual hallucinations, as cited by Aguggia and Grassi¹: 'What we can say, in general terms, is that these hallucinations reflect the tiny anatomical organization, the cytoarchitecture, of the primary visual cortex, including its columnar structure - and how the activity of millions of nerve cells organizes itself to produce complex, ever-changing patterns. We can actually see, through such hallucinations, something of the dynamics of a large population of living nerve cells and, in particular, the role of what mathematicians call deterministic chaos in allowing complex patterns of activity to emerge throughout the visual cortex. This activity operates at a basic cellular level, far below the level of personal experience. They are archetypes, in a way, universal of the human experience.' Furthermore, this profound connoisseur of migraine, apud Ferreira⁴ recognized that 'from the migraine aura, one can map, through experience, exploration and reflection, an entire world - the cosmography of an individual'.

In essence, these auras usually occur before the onset of the headache phase and can vary in duration and intensity for each individual. According to Shankar et al.⁹ the visual aura in migraine can be represented by a flickering and irregular arc of light, bright lines, or a blind spot in the visual field. Consequently, visual auras in migraines can manifest themselves in several ways, presenting a spectrum of visual disturbances as suggested in the images in Figures 1. Concerning the first image, 'A Brushstroke of Migraine', depicts a painter suffering a migraine attack, holding his head amidst a surreal atmosphere, and integrates several

elements of the visual aura - such as sparkling lights, patterns in zigzags, palisaded structures and empty patches in the visual field, to convey the struggle, disorientation, and sensory overload amidst this neurological storm.

The other interpretations regard: Sparkling aura, 'star point', encapsulates the fleetingness of lights flickering and visualizes these indescribable and ghostly flickers, showing their transitory and ethereal quality; The Jagged Arc of Light, 'Luminous Fractals', representing jagged, fractured arcs of light and incorporates sharp, angular lines and radiant tones, creating a sense of dynamic movement and instability; Bright Lines Aura, 'Radiant Streaks', encapsulates the vivid and intense glowing lines that seek to capture the vibrant and striking nature of these glowing streaks, highlighting their intensity and brilliance against the visual field; Blind Spot Aura, 'Voided Sightlines', illustrates the visual phenomenon of blind spots as areas of emptiness within the visual field, emphasizing their absence and the disturbance they cause to vision.

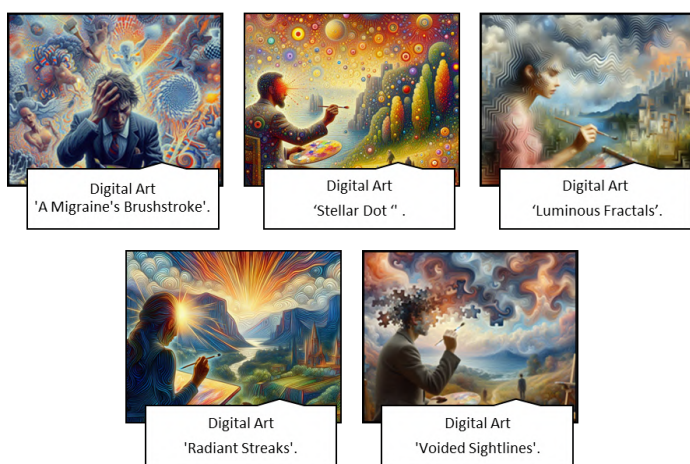


Figure 1. 'Fractured Illusions' from Digital Interpretations. Sources: Image Creator of the DALL-E platform with recommendations given by the author of this paper.

Migraine with Visual Aura in Art History

Some historical moments of migraine that influenced art include renowned artists such as Hildegard de Bingen, Giorgio de Chirico, Salvador Dali, and supposedly Pablo Picasso. These artists, with their unique styles and perspectives, may have channeled their personal experiences with migraines, particularly the visual aspects, into their works. His creations serve as testimony to the potential influence of migraines on the creative process, demonstrating the interaction between neurological phenomena and artistic expression.

Interpretations of his works may reflect his visual experiences of migraine and these works of art have been interpreted by scholars as potentially influencing or portraying elements related to migraine experiences, particularly visual aura or perceptual disturbances. These artists known for their unique styles may have incorporated their personal experiences with migraines into their work.

Although there is no definitive proof of his diagnoses, historical accounts, interpretations of his artwork, and descriptions of his experiences point to a potential connection between his creative expressions and the visual phenomena associated with migraines especially in the cases of Hildegard of Bingen, Giorgio de Chirico and Salvador Dali.

Hildegard of Bingen (1098 - 1179), a prominent German mystic, composer, and visionary, is believed to have suffered migraines based on historical records describing her intense visions¹. Scivias is an illustrated work that describes various religious visions she experienced, often described as vivid and otherworldly, in line with the visual phenomena associated with migraines, including flickering lights, geometric patterns, and fortifying specters. These visual disturbances were interpreted as influencing her artistic expression and the content of her visionary writings. According to Sacks, apud Haan et al.⁶ these reports leave no doubt as to its migraine nature.

Pablo Picasso (1881-1973) was a Spanish painter, sculptor, engraver, ceramist, and set designer, co-founder of the Cubist movement and pioneer of several artistic styles throughout his career. His supposed migraines are speculative as there is a lack of concrete evidence in biographies or contemporary sources supporting his migraine condition, however, the 'illusory division' in the drawings of migraine patients suggests correspondence with Picasso works such as 'La femme qui pleure' and 'Portrait de femme au chapeau' which displays facial division⁶. There is a discussion around Cubist representations of vertically divided faces, linking this technique to Picasso and other Cubists, with this artistic choice possibly resulting from medical conditions such as migraine auras, eye diseases, or inspirations such as African masks. However, Picasso's art may not have been directly shaped by migraine auras due to their subjective and transient nature, in contrast to the visual problems caused by eye diseases.

Giorgio de Chirico (1888-1978), an Italian, known as the 'Father of Surrealism' and founder of the 'scuola metafisica art movement', is believed to have drawn inspiration from his personal experiences with migraines in his art, such as geometric patterns, distortions, and metamorphosis, dark shapes, scotomas that were included in his paintings. It is assumed that migraine with aura served as the basis for his 'Pittura metafisica', because of its various unusual aspects, and because he suffered from 'certain abdominal pains and migraines', and it appears that not only typical visual auras were depicted, but also sensations of kinesthetic pain with atypical aura¹. His works such as 'The Return to the Castle', 'Spettacolo Misterioso', and 'The Enigma of the Day', often portray surreal, dreamlike landscapes and distorted perspectives, recalling the visual distortions and altered perceptions experienced during migraine auras. . De Chirico's artistic style, characterized by mysterious atmospheres, elongated

shadows, and enigmatic architectural forms, has been associated with the disorienting and hallucinatory nature of migraine experiences.

As for the Spanish Salvador Dali (1904 - 1989), a self-proclaimed migraineur¹, known for his surreal and dreamlike works, had personal encounters with migraine, which may have significantly influenced his artistic creations. A notable piece often associated with migraine-like visual auras is 'The Persistence of Memory,' which features melting clocks. However, his painting 'Hallucinogenic Toreador' exemplifies his distinctive style, featuring fused forms, distorted perspectives, and fragmented images reminiscent of the visual disturbances experienced during migraine auras. Dalí's fascination with distorted reality, symbolism and the subconscious aligns with the altered subjective perceptions often associated with migraines, suggesting a possible link between his artistic vision and his experiences with this neurological condition.



Figure 2. "Migraineurs or supposed to be". Source: Wikimedia Commons.

Artistic Expression and Migraine Manifestations Until Migraine Art

Artists portray their migraine experiences in their art, with some explicitly recognizing their visual migraine aura as part of their artistic inspiration, citing examples of recurring visual motifs and symbolism in their works. In this wave, the British Migraine Association organized a series of migraine art competitions in the 1980s to share the diverse experiences of people with migraines. Analyzed artworks submitted to the first National Migraine Art Competition, sponsored by the British Migraine Association and WB Pharmaceuticals, of over 200 entries, 70% showed spectral appearances, 48% showed fortifications, 16% showed visual loss and 2.5 % showed mosaic views^{2,5}. The Migraine Art Competition Collection is made up of 545 paintings submitted to the four Migraine Art Competitions of 1980-1987^{8,10}. Thus, there is the emergence of 'migraine art' as a recognized genre with the participation of pharmaceutical industries to sponsor exhibitions and competitions centered on migraine art, which shows the intersection between art, neuroscience, and public engagement, in addition to the profound influence of migraines on artistic creation. Thus, over time, there has been a transformative change in the way society and medicine view migraines. Starting with the creation of the British Migraine Association and evolving into specialist clinics and greater research efforts, perceptions about migraines have changed significantly, from the initial belief that migraines were purely vascular issues, to recognizing their neurological complexities.



Figure 3. "Artistic Insights: Migraine, Vision, and Creativity"

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The struggles faced by migraine sufferers, including misunderstanding and social contempt, have been challenged through advocacy, research, and specialist health services. Diverse approaches, from hormonal therapies to dietary studies, have contributed to a more

comprehensive understanding of migraines.

In the 21st century, the digitization of the Migraine Art Collection and the shift to online communities reflect the evolution of how people communicate and engage with their migraine experiences, with the emergence of the term 'migraíneur' indicative of the integration of migraines. In personal identity, emphasizing the profound impact of the disease on various aspects of life. Furthermore, art therapy and outsider art provided a unique way of expressing the subjective experiences of migraine sufferers, highlighting the importance of creative expression in healthcare. However, despite advances in understanding and treatment, migraines continue to be a significant challenge for many individuals.

CONCLUSION

The confluence of migraines and artistic creation offers a captivating insight into the way neurological conditions intertwine with the imaginative realm of art. Furthermore, the emergence of 'migraine art' as a recognized genre signals the growing recognition of the intersection between neurological disorders and creative expression, with pharmaceutical sponsorships for the convergence of art and neuroscience. This study illuminates the intriguing interplay between neurological phenomena and artistic inspiration, inviting greater investigation and appreciation of the profound ways in which migraines have shaped artistic creation throughout history and contemporary contexts.

In short, this comprehensive overview not only investigates the historical context of migraines but also emphasizes current challenges and the need for ongoing awareness, research, and support for those affected by migraines. The artworks in the Migraine Art Collection offer poignant insights into the multifaceted experiences of migraine sufferers, portraying the role of medication in their lives and the challenges they face.

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