





The Role of Art Therapy in Neuroscience within the African Context: A Narrative Review with Insights from an Art Therapy Session In Kenya

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Received: 23-05-2024; Revised:14-07-2024; Accepted:14-07-2024

DOI: <https://dx.doi.org/10.4314/eajns.v3i2.7>

Summary

Art therapy has been established as a powerful psychotherapeutic tool that utilizes artistic media to enhance mental and neurological well-being. This has been supported by various neuroimaging and electrophysiological studies which reveal its positive effects on brain function. This review emphasizes art therapy's potential within the African context, where it could potentially help to address diverse neurological and psychological needs due to its adaptability to cultural nuances and effectiveness in non-verbal communication settings. The review also highlights an art therapy session aimed at addressing grief experienced by healthcare workers. This review also highlights the necessity for expanded educational programs, policy development, and research to integrate art therapy more comprehensively into African healthcare systems. These advancements are crucial for overcoming cultural and resource-related barriers, ensuring the accessibility and efficacy of art therapy within the African context.

Keywords: art therapy, neuroscience, African context, culture, psychotherapy, Kenya

INTRODUCTION

Art therapy as defined by the British Association of Art Therapists refers to a form of psychotherapy that utilizes artistic media as its primary mode of expression and communication (1). It is a practice that integrates the creative process in

addressing mental and neurological disorders. Art therapy as a therapeutic modality utilizes various forms of art to enhance emotional, psychological and cognitive well-being which have been shown to promote neuroplasticity and

emotional resilience (2). This therapeutic approach harnesses the natural human response to gravitate toward arts for healing and uses it to stimulate brain activity and promote emotional and cognitive recovery. The neuroscientific basis of art therapy is increasingly supported by neuroimaging and electrophysiological studies that demonstrate how art affects brain function. These studies often reveal increased activity in brain areas associated with positive emotions and decreased activity in regions linked to depression and anxiety (3).

Within the African context, the application of art therapy has the potential to address diverse neurological and psychological needs across this continent which has rich cultural diversity and varying health landscapes. Art therapy's adaptability and non-verbal nature make it an invaluable tool in settings where language barriers exist and where stigma may still surround more conventional mental health treatments (1,4). It provides a culturally sensitive approach that can be integrated

with local traditions and practices, potentially increasing its efficacy and acceptance by local communities. This review also includes a summary report from an art therapy session aimed at addressing grief experienced by healthcare workers that was conducted at Kenyatta National Hospital, Kenya.

The role of art therapy in neuroscience is multifaceted. This review seeks to explore and document how art therapy can be integrated into existing healthcare frameworks in Africa, considering the unique cultural, economic, and infrastructural challenges faced by the continent. Given the increasing prevalence of neurological disorders and the need for culturally appropriate mental health services in Africa, this review aims to provide an analysis of art therapy's efficacy and adaptability. By doing so, it aims to foster a deeper understanding among healthcare providers, policymakers, and the general public, potentially guiding future art therapy implementations and research initiatives.

METHODOLOGY

Literature Search

A thorough search was conducted for relevant literature across databases such as PubMed, Scopus, and Google Scholar. The focus was on peer-reviewed journals, authoritative books, and credible reports on art therapy, neuroscience, and cultural considerations in Africa.

Inclusion Criteria

The sources that were included specifically discussed the neurological applications of art therapy, its neuroscientific underpinnings, and cultural relevance in African healthcare contexts. Sources were selected based on their relevance, publication date (preferably within the last 20 years; with some exceptions), and their focus on empirical data or well-grounded theory.

Data Extraction

Key information was extracted from selected sources, focusing on the effectiveness of art therapy in neurological disorders, neuroscientific evidence supporting art therapy, and adaptations of art therapy practices in culturally diverse African settings.

Thematic Analysis

Extracted data was analyzed to identify prevalent themes such as therapeutic outcomes, neuroscientific findings, and cultural integration strategies.

Narrative Construction

A coherent narrative was constructed that linked the identified themes with the broader context of art therapy in neuroscience, emphasizing how these findings applied specifically to the African context.

Critical Evaluation

The findings were critically evaluated, discussing the strengths and limitations of the current literature and identifying gaps that could be addressed in future research.

Art Therapy Event at Kenyatta National Hospital

This event was conducted at Kenyatta National Hospital on the 27th of April 2024 as part of the Global Arts in Medicine Festival 2024. This was an art therapy session aimed at addressing grief experienced by healthcare workers.

Participant Recruitment

Healthcare workers from various departments were invited to participate in the art therapy session. This advertisement was done online through WhatsApp and Instagram platforms. The recruitment focused on individuals experiencing grief or emotional stress. A total of 18 individuals attended the event.

Pre-Event Assessment

Participants completed a pre-event questionnaire to gauge their initial emotional state and expectations of the

event. This assessment helped in tailoring the art therapy activities to the specific needs of the participants.

Art Therapy Session

The session spanned approximately five hours and included various forms of art therapy such as drawing, music therapy, poetry, and group discussions led by a grief counsellor. Each modality was chosen to facilitate the expression and processing of emotions related to grief.

Post-Event Assessment

After the session, participants filled out a post-event questionnaire to evaluate changes in their emotional and mental states. This assessment aimed to measure the immediate impact of the art therapy session.

Data Analysis

Data from the pre-and post-event questionnaires were analyzed for descriptive statistics using Excel to determine the effectiveness of the session in alleviating emotional distress and enhancing coping mechanisms.

NARRATIVE REVIEW

A historical overview of art therapy

Art therapy is a field that has evolved significantly over the past century. It originates from the fields of arts and psychotherapy. Initially, art therapy was informally implemented by psychiatrists who noticed that the process of creating art appeared to improve patients' well-being. These benefits were noted during the mid-20th century when artists who were trained in psychotherapy began to articulate the therapeutic benefits of art-making and used it systematically to treat clients. This evolution was well elaborated in two books: the "Handbook of Art Therapy" by Cathy A. Malchiodi (5) and "Healing Arts: The History of Art Therapy" by Susan Hogan (6).

The formalization of art therapy as a distinct discipline occurred in the mid-20th

century, predominantly in the United Kingdom and the United States. It was pioneers like Margaret Naumburg and Edith Kramer in the U.S. who established foundational theories for art therapy. Naumburg emphasized the psychoanalytic approach, whereas Kramer incorporated a more artistically driven method (7,8). Margaret Naumburg, often referred to as the "mother of art therapy," grounded her approach in psychoanalysis, emphasizing the use of art as a means to access unconscious emotions and conflicts. She believed that the spontaneous creation of art could reveal underlying psychological conditions, facilitating an understanding and expression that could be more difficult to articulate in words alone (9). Edith Kramer, on the other hand, approached art therapy with a focus on the artistic process itself,

viewing the act of creating art as inherently therapeutic. Kramer proposed that engaging in the creative process could help individuals achieve a balance between their inner realities and outer experiences, leading to personal integration and healing. Her approach highlighted the therapeutic benefits of the artistic process, including sublimation, where disordered impulses are transformed into socially acceptable expressions (7). These early theoretical frameworks laid the groundwork for what would become a rich, diverse field spanning different therapeutic approaches that utilize art to heal.

The neuroscientific foundations of art therapy

The neuroscientific foundations of art therapy are detailed through the use of advanced imaging technologies such as functional Magnetic Resonance Imaging (fMRI) and Electroencephalography (EEG). These technologies have revealed how engaging in artistic activities stimulates specific brain areas associated with emotional regulation and cognitive functions. For instance, fMRI studies have shown increased activation in the prefrontal cortex during art-making tasks, which is associated with higher-level cognitive functions like planning and decision-making (3). Furthermore, EEG studies have documented changes in brain wave patterns during art therapy sessions, indicating enhanced neural connectivity and decreased stress levels (10).

Research has also highlighted the role of the amygdala, a brain region critical for emotional processing, showing that art therapy can reduce activation in this area, which is often overactive in individuals with anxiety and depression (3). Another study also reported a reduction in cortisol levels in participants following art-making (11). This suggests that art therapy may help mitigate emotional distress and promote a more balanced psychological state. Moreover, the integration of sensory, motor, and cognitive processes during artistic creation enhances neuroplasticity-

the brain's ability to reorganize itself by forming new neural connections- offering therapeutic benefits for individuals with neurological disorders (12).

Art therapy techniques and their applications in neurological disorders

Art therapy offers various modalities that are tailored to enhance rehabilitation and cognitive recovery in individuals with neurological disorders. These modalities harness various sensory, motor, and cognitive processes, facilitating neuroplasticity and improving overall function. Examples include sensory stimulation therapy, expressive arts therapy, cognitive art therapy, neurofeedback art therapy and digital art therapy.

Sensory stimulation therapy utilizes art media that engage the patient's senses, such as tactile media (clay, fabric), visual arts (painting, drawing), music or even olfaction to stimulate sensory processing. This has been reported to be beneficial for various neurological conditions such as stroke (13), dementia (14) and traumatic brain injury in pediatric populations (15). Expressive therapy such as music, dance and drama not only offers diverse means of expression but also actively engages different cognitive and sensory systems, facilitating alternative pathways for communication and expression. This is particularly beneficial in conditions such as aphasia where communication or expression is affected due to stroke or brain injury (16). Cognitive art therapy focuses on enhancing cognitive functions such as memory, problem-solving, and executive functions through structured art activities. Tasks might include creating sequential art pieces or solving problems through art projects. This modality is useful for patients with cognitive deficits due to neurological issues like dementia where it's been reported that engaging in complex art projects can improve cognitive function and even slow cognitive decline (17). Neurofeedback art therapy integrates biofeedback with artistic expression, allowing patients to influence their brainwave patterns through real-time

displays of their brain activity while they engage in art-making. This technique is especially promising for conditions like epilepsy and ADHD, where patients can learn to regulate their neural activity, potentially reducing symptoms (18). Advancements in technology have led to the development of digital art therapy, where patients use digital tablets and software to create artwork. This is particularly advantageous for individuals with motor impairments, as digital tools can be adapted for easier manipulation. Digital art therapy can help improve motor control, cognitive abilities, and emotional well-being in patients (19).

Art therapy in the African context: Cultural considerations, local case studies and barriers to implementing art therapy in neuroscience

Due to its origin, art therapy practice is largely grounded in Eurocentric approaches (20). For various forms of art therapy to be effective in an African context it requires nuanced cultural understanding due to the continent's diverse traditions and practices. Cultural considerations are paramount, as therapy techniques must be adaptable to local beliefs and practices to be effective and respectful (21). For instance, integrating indigenous art forms and symbolism can enhance relevance and acceptance of therapy. A systematic literature review in Kenya reported the efficacy of various art-based interventions for children with special needs (22). Another study conducted in Lang'ata Women's Prison, Nairobi, Kenya also reported a reduction in depressive symptoms after art therapy sessions (23). Literature on art therapy in local contexts is still limited in comparison to other parts of the world.

Implementing art therapy within African contexts presents several significant barriers that complicate its widespread adoption and effectiveness. Cultural perceptions of mental health treatments, often seen through a Western lens, may not align with traditional African approaches to health and wellness, posing challenges in the acceptance and

integration of art therapy as a legitimate therapeutic method (24). A crucial hurdle is the scarcity of trained art therapists who are versed not only in therapeutic techniques but also in cultural competencies that resonate with local communities (25). Additionally, funding and resources necessary for the provision of art therapy are often limited. This includes materials for art-making and infrastructure for training and maintaining a cadre of professionals. Institutional support can also lag, particularly in settings such as prisons or hospitals, where the administration may not prioritize or understand the benefits of art therapy. Such environments may lack the necessary space or policies that facilitate therapeutic programs. Overcoming these barriers requires concerted efforts in education, policy-making, and community engagement to ensure that art therapy is both accessible and culturally appropriate.

Insights from art therapy event conducted at Kenyatta National Hospital

This art therapy conducted at Kenyatta National Hospital as part of the Global Arts in Medicine Festival 2024 was aimed at using various art therapy forms to address grief experienced by healthcare workers. This session had a total of 18 participants from various cadres in healthcare. Pre-post questionnaires were administered before and after the art therapy session. The art therapy modalities utilized during the five-hour session included: expressive arts through drawing, music therapy, poetry and a group therapy session led by a grief counselor. In the pre-event questionnaire: 81.8% of the participants reported that this was their first art therapy session, while 72.7% reported moderate to severe emotional stress prior to the session. All the respondents reported that the motivation behind attending the session was to look for an outlet for the stress they were experiencing. In the post-event questionnaire, 100% of the participants reported that they had noticed positive changes in their emotional and mental state after participating in the art therapy

session. The qualitative aspects of the questionnaire revealed that the majority respondents found art therapy to be rejuvenating, unique and effective in dealing with emotions such as grief. This survey provided empirical insights into the efficacy and potential of arts in psychotherapy and can therefore be considered alongside traditional methods such as cognitive behavioural therapy (26).

Recommendations for future directions for art therapy in Africa

The future of art therapy in Africa presents numerous opportunities for development across policy, education, and research. Governments and non-governmental organizations could enhance support for art therapy by recognizing it officially within the health and education sectors. This would include the integration of art therapy services into public health systems and educational institutions, which would require the formulation of relevant policies and guidelines to standardize practice and ensure quality.

Conclusion

Art therapy is emerging as a significant therapeutic tool within neuroscience, particularly in the African context where there are unique cultural and infrastructural challenges. This therapy modality, supported by neuroscientific research, shows promise in enhancing the

Expansion in educational programs dedicated to art therapy is crucial. This would entail establishing more training facilities and university courses across Africa will help produce a larger workforce of qualified art therapists. These programs should focus on blending international art therapy practices with local cultural elements to create contextually relevant therapeutic approaches. Increased research on art therapy's efficacy in different African contexts would help tailor interventions appropriately. It is also important to document and evaluate existing therapy practices to better understand their impact and refine methods accordingly. Collaborations between African researchers and international institutions could also enhance the scope and scale of research activities. These steps would help in recognizing art therapy as a valuable tool within therapeutic and educational frameworks in neuroscience practice, ensuring it is adapted to meet local needs effectively.

management of various neurological conditions. Advancing art therapy in Africa will require not only robust policy support but also tailored educational programs, and localized research to integrate this practice into mainstream healthcare systems.

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