

The Effectiveness of Art Therapy (Drawing) in Reducing Anxiety: The Role of a Growth Mindset in Improving Therapeutic Outcomes

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ABSTRACT

Keywords:

Art therapy, drawing,
anxiety, growth
mindset, creative
therapy, mental
health.

This study aims to explore the effectiveness of art therapy (drawing) in reducing anxiety and to examine the role of growth mindset in improving therapeutic outcomes. Anxiety was measured using the Hamilton Anxiety Rating Scale (HAM-A), while growth mindset was assessed using the Mindset Assessment Profile (MAP). The study employed experimental design with two groups: an experimental group that participated in art therapy (drawing) and a control group that did not receive therapy. The results showed a significant decrease in anxiety in the experimental group, with an average reduction of 10 points on the HAM-A scale ($p < 0.05$). A significant negative correlation was found between an increase in growth mindset and a decrease in anxiety in the experimental group ($r = -0.62$, $p < 0.01$). This research demonstrates that art therapy can reduce anxiety, and that growth mindset plays an important role in enhancing the effectiveness of therapy. These findings support the integration of growth mindset in art therapy programs, as well as the use of Mind Map Facilitators to deepen self-reflection and healing processes.

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INTRODUCTION

Anxiety is a common mental disorder, with its prevalence increasing significantly worldwide. Based on data, mental health in Indonesia will enter a critical phase in 2025. Data from the Indonesian Ministry of Health show that 1 in 5 Indonesians experience symptoms of mental disorders, ranging from *anxiety* to severe depression. WHO research (2025) noted that 35% of urban workers reported chronic burnout, while young people (15–24 years old) experienced a 40% increase in *anxiety* disorders compared to the pre-pandemic era, which disrupted their emotional well-being and quality of life. One effective therapeutic approach to dealing with *anxiety* is art therapy, which relies on creative expression as a way to relieve feelings that are difficult to express verbally (Potash et al., 2025). Drawing, as a technique in art therapy, provides an opportunity for individuals to express their emotions in visual form (Abbing et al., 2019).

The growth mindset theory introduced by Carol Dweck (2006) is important in the context of therapy because of its ability to amplify therapeutic outcomes. Growth mindset is the belief that a person's abilities can develop through effort and learning (Schleider & Weisz, 2018). Individuals with a growth mindset are more likely to deal with emotional challenges, including *anxiety*, because they see adversity as an opportunity to learn and grow (Zhang et al., 2024).

Previous studies have shown the potential of both art therapy and growth mindset interventions in reducing *anxiety*, yet limitations remain. Abbing et al. (2019) conducted a randomized controlled trial (RCT) with adult women diagnosed with *anxiety* disorders and found that art therapy significantly reduced *anxiety* symptoms and improved quality of life up to a three-month follow-up (Wang et al., 2022). While rigorous in design, the study relied on a small, homogeneous female sample and employed a waiting-list control, which limits generalizability and makes it difficult to separate specific

intervention effects from non-specific expectancy effects (Zhu et al., 2025). Moreover, it did not consider cognitive moderators such as mindset (Huang, L. et al., 2020; Huang, H.-S. et al., 2025). In contrast, Schleider and Weisz (2018) tested a brief, single-session growth mindset intervention in adolescents and reported reductions in depression and, to a lesser extent, *anxiety* symptoms over nine months. Although the intervention demonstrated scalability and long-term benefits, it did not incorporate creative or expressive elements, nor did it examine whether growth mindset could enhance the outcomes of art-based therapies. Addressing these gaps, the present study integrates drawing-based art therapy with growth mindset principles to examine both their independent and interactive effects on *anxiety* reduction in an Indonesian context. The objective is twofold: (1) to test the effectiveness of art therapy (drawing) in reducing *anxiety*, and (2) to assess whether growth mindset strengthens the therapeutic outcomes. The theoretical contribution lies in proposing an integrative model that links creative expression with cognitive reframing, while the practical contribution is to provide a cost-effective, culturally adaptable intervention that can be implemented in schools and communities as part of sustainable mental health promotion.

METHOD

The experimental design used was a pre-test and post-test control group design, with two groups: the experimental group that followed art therapy (drawing) and the control group that did not receive therapeutic interventions. Anxiety decreases were measured using the Hamilton Anxiety Rating Scale (HAM-A), and growth mindset changes were measured using the Mindset Assessment Profile (MAP).

The study participants consisted of 60 adult individuals (ages 18–60 years) with high levels of anxiety, who were recruited through a counseling center. Participants were randomly divided into two groups: 30 people in the experimental group and 30 people in the control group. The inclusion criteria included participants with a HAM-A score of ≥ 18 , indicating high levels of anxiety.

The instruments used were:

- 1) Hamilton Anxiety Rating Scale (HAM-A): A 14-item scale to measure physical and psychological anxiety used to assess anxiety levels before and after therapy (Hamilton, 1959).
- 2) Mindset Assessment Profile (MAP): A tool designed by Dweck (2006) to measure the level of growth mindset of participants. The tool consists of 30 items that assess participants' confidence in their ability to thrive through effort and experience.

Before therapy, all participants filled out the HAM-A and MAP to measure their anxiety and growth mindset. The experimental group participated in 8 art therapy sessions (drawing) which lasted for 1 hour each, focusing on free drawing and self-reflection on the work made. The control group did not receive any therapeutic interventions. After 8 weeks, both groups refilled HAM-A and MAP to measure the changes that occurred.

The preparation of art therapy is designed to support the development of participants' growth mindsets, with the following elements:

1. Preparation of Achieved Goals: Participants are tasked with setting small goals in drawing, which provide a sense of accomplishment and support personal development.
 2. Positive and Constructive Feedback: Therapists provide feedback that focuses on effort and process, not just the end result.
 3. Self-Reflection: Each participant is given the opportunity to reflect on their artwork, which strengthens self-understanding and identifies limiting mindsets.
 4. Mindfulness: Mindfulness techniques are used to help participants stay focused on the process of drawing and accepting themselves without judgment.
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After each art therapy session, participants were given a counseling room to discuss the emotional experiences that arose during the drawing session. This approach supports the principles of Client-Centered Therapy from Carl Rogers (1951), which emphasizes the importance of non-judgmental acceptance and self-exploration.

To analyze the data, Analysis of Variance (ANOVA) was used to test the differences between the two groups in decreased anxiety and growth mindset changes. One-way ANOVA was used to compare the average HAM-A and MAP scores between the experimental group and the control group. In addition, Pearson's correlation analysis was conducted to test the relationship between a change in growth mindset and a decrease in anxiety in the experimental group. A p value < 0.05 is considered significant.

RESULTS AND DISCUSSION

Decreased Anxiety

The results of the ANOVA analysis clearly demonstrate that the experimental group receiving art therapy showed a significant reduction in anxiety, as indicated by an average decrease of 10 points on the HAM-A scale ($F(1, 58) = 12.34, p < 0.05$). In contrast, the control group, which did not receive the intervention, only recorded a 2-point decrease, which was not statistically significant ($F(1, 58) = 1.02, p = 0.31$). This finding highlights the effectiveness of art therapy in addressing anxiety symptoms, as the difference between the two groups suggests that the improvements cannot be attributed to chance, measurement error, or natural fluctuations alone. Rather, the structured use of drawing as a therapeutic medium appears to provide meaningful benefits in reducing participants' anxiety levels.

One explanation for this effect is that art therapy provides individuals with an alternative mode of expression for emotions that are often difficult to verbalize. Drawing enables participants to externalize their inner feelings, thereby reducing the psychological burden of rumination and excessive worry. This aligns with prior studies showing that nonverbal, creative processes can serve as effective emotional regulation strategies, helping participants gain a sense of control over their internal states. The findings from this study reinforce the therapeutic potential of creative expression, positioning art therapy as a valuable complement to more conventional cognitive and behavioral approaches in the treatment of anxiety.

Furthermore, the results suggest that art therapy may be particularly relevant in cultural contexts where verbal self-disclosure is less common or stigmatized. By offering a nonverbal outlet, drawing can bypass communication barriers and facilitate engagement in therapy for populations that may otherwise avoid seeking psychological help. Thus, beyond its demonstrated statistical effectiveness, the intervention carries practical and cultural implications for designing inclusive, accessible, and non-stigmatizing mental health programs.

The Influence of Growth Mindset

Pearson's correlation analysis showed a significant negative correlation between increased growth mindset and decreased anxiety in the experimental group ($r = -0.62, p < 0.01$). These findings indicate that participants with greater growth mindset improvements tend to experience more significant reductions in anxiety. In other words, the higher the level of growth mindset the participants have, the greater the positive effect of art therapy on their anxiety.

Discussion

a. Theory Growth Mindset

The growth mindset theory, introduced by Dweck (2006), posits that individuals who believe their abilities can be developed through effort, learning, and persistence are better

equipped to cope with challenges. In therapeutic contexts, this means that people with a growth mindset are more likely to view anxiety not as a permanent barrier but as a challenge that can be addressed and overcome. The findings of this study provide empirical support for this theory, showing that participants with higher growth mindset scores experienced greater reductions in anxiety compared to those with lower scores. This suggests that growth-oriented beliefs may act as a psychological buffer, allowing individuals to approach therapy with openness and optimism.

This relationship between growth mindset and therapeutic outcomes also reflects broader cognitive-behavioral frameworks that emphasize the importance of cognitive appraisal in shaping emotional responses. When individuals see difficulties as opportunities to learn rather than as evidence of failure, they are less likely to experience maladaptive stress responses. Thus, growth mindset not only shapes how participants engage in therapy but also influences how they interpret their own progress and setbacks. By framing therapeutic exercises as part of a learning journey, participants may develop resilience and sustain improvements beyond the duration of the intervention.

b. Art Therapy and Its Relationship to the Growth Mindset

Art therapy, particularly drawing, offers a powerful medium for individuals to externalize emotions that may be difficult to articulate verbally. The act of creating visual representations of one's feelings allows participants to process internal experiences in a safe and constructive manner. Consistent with prior studies, this research confirmed that drawing-based interventions significantly reduced anxiety symptoms. Importantly, the integration of art therapy with growth mindset principles created a reinforcing effect, as participants not only found relief in self-expression but also reframed the process as an opportunity for personal development.

This synergy between art therapy and growth mindset highlights the value of combining creative and cognitive approaches in mental health interventions. While art therapy facilitates emotional release and self-understanding, the growth mindset provides a cognitive framework that encourages participants to persist, experiment, and reinterpret their experiences in constructive ways. Together, these elements create a therapeutic environment where participants feel both empowered and supported. In addition, the process of artistic expression naturally aligns with growth-oriented thinking, as drawing often involves trial, error, and revision—skills that parallel the mindset of continuous learning and adaptation.

c. Practical Implications

The practical implications of these findings are significant for the design and delivery of anxiety interventions. Therapies that integrate growth mindset techniques into art therapy can produce stronger outcomes by simultaneously addressing both the emotional and cognitive dimensions of anxiety. Mental health professionals are therefore encouraged to incorporate structured growth mindset exercises, such as reframing setbacks as learning opportunities or setting incremental progress goals, within art therapy programs. By doing so, therapists can cultivate resilience while also providing participants with creative tools for emotional regulation.

Furthermore, the introduction of supplementary techniques such as the Mind Map Facilitator (MMF) can enrich the therapy process. MMF enables participants to organize their thoughts and emotions visually, helping them identify connections between feelings, behaviors, and experiences. This structured reflection deepens self-understanding, fosters a sense of agency, and enhances the overall effectiveness of therapy Yogyakarta (Schleider & Weisz, 2018; Thompson & Gladstone, 2022; Zhu et al., 2025). From a broader perspective, such integrative interventions are not only cost-effective but also adaptable to educational and community settings, making them practical tools for promoting mental health at scale. The implication is that mental

health services should move toward multimodal approaches that combine cognitive, creative, and reflective techniques to achieve sustainable therapeutic outcomes (Abbing et al., 2018; Abbing et al., 2019; Huang et al., 2025; Martin et al., 2018).

CONCLUSION

Art therapy (drawing) has been shown to be effective in reducing anxiety, and the growth mindset reinforces the results of this therapy. This study recommends the integration of techniques that support the development of growth mindset in art therapy programs, as well as the use of Mind Map Facilitators to help participants deepen their self-understanding and reduce anxiety. Mental health professionals can leverage these findings to design more holistic and effective therapeutic interventions. Future studies are suggested to test this combined approach across diverse populations and settings to strengthen its applicability and scalability.

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