

An Exploratory Study on the Impact of Painted Colors in Adolescent Psychotherapy

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Abstract. Adolescence is a critical period for mental health development. However, academic pressures, social challenges, and other factors frequently contribute to psychological distress, such as depression and anxiety, among adolescents. This study aims to explore the intervention effects of painting art therapy, with a particular focus on the application and metaphorical use of color, on adolescent depressive symptoms and their underlying mechanisms. The study involves adolescents exhibiting depressive symptoms, who receive individual painting art therapy supplemented by activities focusing on color perception, association, and application. Intervention effectiveness is assessed through multidimensional evaluations, including the analysis of artworks and subjective feedback from participants. Prior research indicates that drawing art therapy significantly alleviates depressive symptoms in adolescents. By employing color as a non-verbal medium, adolescents can more effectively channel and process negative emotions. Color, as a subjective psychological response to the external world, plays a crucial role in emotion regulation through its psychological effects and metaphorical associations. For instance, warm tones (e.g., yellow, orange) are often linked to hope and vitality, contributing to improved mood, whereas cool tones (e.g., gray, blue) may be associated with depression and sadness. The findings suggest that color's psychological effects are shaped by both innate predispositions and acquired experiences, including cultural background. Future research could further investigate specific color attributes, cross-cultural variations in color symbolism, and the mapping between color and abstract concepts to gain a more comprehensive understanding of color's potential in psychological interventions.

Keywords: Art therapy, painting therapy, color psychology, adolescents, psychological interventions

1. Introduction

In contemporary society, evolving educational environments and escalating academic pressures contribute to heightened emotional volatility and sensitivity among adolescents, a period characterized by rapid physical and mental development. Adolescent mental health issues are increasingly recognized as a global public health concern. The World Health Organization reports that approximately 20% of adolescents experience mental health challenges during their secondary

school years, with nearly 50% of adult mental disorders originating before the age of 14. Adolescence represents a critical stage for individual development, significantly impacting self-identity, personality formation, and social skills. The 2022 Youth Mental Health Survey Report indicated that 14.8% of 30,000 adolescent participants were at risk of depression. Social transformations have intensified psychological pressure on adolescents, adversely impacting their future physical and mental health and career development [1]. Given the limitations of traditional psychotherapeutic methods for adolescents with less verbal expressiveness, art therapy is gaining increasing prominence in psychotherapy. Historically, the practical applications of art therapy, particularly regarding the treatment of psychological problems through color and its findings, have rarely been comprehensively summarized or compiled.

The use of color in painting serves as a core element of art healing, offering significant research value and application potential in adolescent psychotherapy. This study explores the positive impact of painted color on adolescent mental health. Color-focused art healing facilitates adolescents' expression of inner emotions and distress through painting. Color possesses inherent emotional and psychological symbolism, with different colors stimulating distinct emotional responses. Drawing provides adolescents with a safe environment to explore their emotions, thereby promoting self-awareness and emotional regulation. Investigating the influence of painted color on adolescent psychotherapy not only enriches the methodologies and theoretical frameworks of psychotherapy but also offers crucial support for adolescent mental health, underscoring its considerable social and practical significance.

This study will delve into the specific mechanisms through which color painting influences adolescent mental health interventions, utilizing in-depth case studies. We will conduct a comprehensive, multidimensional analysis (encompassing emotional, cognitive, behavioral, and social aspects) of representative adolescent cases. Building upon the established benefits of art therapies, such as mandala painting, in specific populations, this research explores the effectiveness and tailored application strategies of various color painting techniques (e.g., guided mandala painting) for alleviating specific psychological distress in adolescents.

This study investigates the role and influence of painted color in adolescent psychotherapy. It begins with a comprehensive review of theories concerning art healing, adolescent stress, and color to establish a theoretical foundation. Subsequently, through an in-depth analysis of representative adolescent cases, the study reveals how color painting facilitates the expression of emotions and catharsis, and alleviates negative emotions such as anxiety and depression via color's psychological effects. The research explores how painting guides adolescents toward self-awareness and problem reframing, enhancing their understanding, acceptance, and the development of positive coping strategies for their psychological states.

To address these aims, the present study investigates how adolescents express their internal emotional states through specific color choices, application, and color metaphors within a color painting intervention. The research examines: how color painting facilitates adolescents' externalization of abstract psychological distress, and its specific impact on enhancing their self-perception and acceptance, and fostering the development of positive coping strategies. By thoroughly exploring these core questions, this study provides a comprehensive understanding of how color painting interacts with adolescents, their psychological distress, and sociocultural contexts to promote mental health. This study will employ a case study approach to examine the impact of various colors on adolescents' emotional and psychological states, and to identify the associations between specific colors and emotional responses. The research will integrate insights from color science, adolescent psychology, and art therapy. By investigating the psychological

effects of color and exploring its mechanisms of action, this study will elucidate how color can be therapeutically utilized in art therapy for adolescents. Such an approach aims to provide psychotherapists and other professionals with more targeted treatment options, thereby improving the efficacy of adolescent psychotherapy.

2. Adolescent emotional distress color painting research gap

Color, as a significant carrier of visual information, has been extensively studied by scholars since the emergence of psychology. In the late 19th century, German psychologists, notably Fechner, began investigating the effects of color on emotional and physiological responses, laying the groundwork for color psychology. As mental health issues, including depression, anxiety, and autism, gain prominence in modern society, there is a growing demand for gentle, non-pharmacological healing methods, leading to the rise of art healing. Among various artistic interventions, color serves as a pivotal medium due to its innate ability to evoke intuitive and emotion-guiding responses. Numerous studies confirm that specific colors can elicit distinct emotional reactions and exert regulatory effects on the nervous system [2].

While color psychology and art therapy have garnered significant attention in mental health interventions, a research gap remains regarding color painting interventions for emotional distress (e.g., anxiety and depression related to social pressures, family dynamics, and education) within adolescent populations. Existing studies have largely concentrated on the general effects of color painting. However, the specific mechanisms by which the psychological effects of color and color metaphors influence adolescent mental health, and the explanation of the underlying transformational processes (e.g., the progression from color perception to emotion regulation and cognitive restructuring), remain insufficiently explored.

2.1. Color metaphor and its role in psychological functioning

Research on color metaphors encompasses four primary domains: abstract concepts represented by color metaphors; the impact of color metaphors on psychological functioning; the study of color attribute metaphors; and their cross-cultural implications. Regarding the formation mechanisms of color metaphors, psychologists have proposed the learned association theory and color context theory, grounded in metaphor research. Future research could further investigate the influence of specific color attributes, the metaphorical meanings of colors across different cultural contexts, the mapping between colors and abstract concepts, and how these metaphorical links affect individuals' cognition, emotions, and behaviors [3]. The metaphorical representations of red and green reflect human adaptation to the natural environment and have shaped social culture. Red is typically associated with aggression, danger, and competition, whereas green is often linked to security, calmness, and vitality. These psychological color effects are influenced by both innate factors and acquired experiences. Subsequent studies could further explore the neural mechanisms underlying the metaphorical representation of red and green colors [4].

2.2. Empirical applications of mandala art therapy in specific adolescent populations

Mandala art therapy, a structured art intervention, has demonstrated effectiveness in alleviating psychological symptoms in specific populations. Research indicates that mandala drawing therapy can significantly alleviate symptoms in children with autism. For instance, Lu Xiaoping's study found that children with autism receiving mandala drawing intervention exhibited substantial

improvements in psychological functioning and behavioral performance, as assessed by measures such as the Autism Behavioral Test and Autism Rating Scale. Furthermore, a randomized group study by Tingting Liu and Lei Cui confirmed that children with autism undergoing mandala painting intervention showed significant enhancements in stereotypic behaviors, social behaviors, and verbal communication skills, along with reductions in self-injurious, aggressive, and destructive behaviors, when compared to a conventional intervention group. These studies collectively provide robust evidence for the efficacy of mandala drawing therapy in improving children's mental functioning and behavior [5]. While these studies specifically address children with autism, their findings on the utility of painted color within a structured therapy framework offer valuable insights for exploring color-based interventions for adolescent psychological issues.

2.2.1. The role of creative expression and color in adolescent well-being

Adolescents in this age group often struggle to express themselves openly to adults. The creative process of using color, however, provides a unique avenue for students to convey their thoughts and emotions, allowing unspoken feelings to be integrated into their artwork. This provides a vital outlet for negative emotions, potentially mitigating the development of psychological issues such as depression. Engaging in focused creative activities also naturally enhances concentration, helps students cultivate a stable and positive mood, promotes emotional regulation, and consequently reduces the incidence of mental health challenges.

2.2.2. Color as a medium for information and cultural significance

Color serves as a powerful visual communication tool, capable of conveying information directly through visual perception. Different colors often carry distinct symbolic meanings and cultural connotations, varying across cultural contexts. In contemporary society, color plays a significant and specialized role in daily life. For example, traffic signals utilize red, yellow, and green for distinct functions, while white zebra crossings signify safety and yellow serves as a warning, commonly seen on roadside signs. Blue is perceived as calming and rational, often used for its soothing effect, hence its prevalence in the uniforms of police, air force, and navy personnel in many countries. Orange, a highly visible color, is notably used for safety equipment like life jackets at sea and in the uniforms of sanitation workers [6].

2.3. Emotional expressions in color

On the psychological response level, different hues have significant regulatory effects on emotional states. Red can enhance attention and boost energy. However, it may also trigger anxiety and tension. Blue is widely used in environmental design. It can stabilize mood, promote thinking, and improve sleep. Yellow can evoke positive, cheerful, and hopeful emotions. It also has a certain effect in stimulating creativity. Green is considered the closest to natural visual stimulation. It is often used in restorative spaces like hospitals and meditation rooms. It brings a sense of balance, security, and psychological comfort. The saturation and brightness of colors also affect the intensity of emotional responses. Colors with high saturation and high brightness are more likely to cause emotional fluctuations. On the other hand, colors with low saturation and low brightness are relatively gentle. They are more suitable for scenarios related to emotional stability and psychological healing [7].

2.3.1. Case description

The client is Xiao Jin, a 14-year-old adolescent. He has obvious mental health issues. He feels low, stressed, and trapped by multiple life difficulties. These problems may cause troubles in interpersonal relationships, learning, and daily living skills. The goal of this intervention is to help Xiao Jin reduce psychological distress. It also aims to promote his self-awareness, emotional expression, and the building of a positive attitude through comprehensive material painting.

In the first stage — scenario creation and free creation — the therapist made a safe and comfortable painting environment for Xiao Jin. Soothing music was played, and warm objects were arranged to help him feel secure. In this environment, Xiao Jin did free painting. His work had blue radiating lines and circles. There was a blue figure surrounded by yellow leaves. On the right, there were black pebbles and dry branches. The whole work was framed with blue lines. The therapist thought these symbolic elements showed that Xiao Jin was “deeply stuck in many difficulties, under huge pressure, and feeling restricted” [8].

In the second stage — psychological reshaping and external inspiration — the therapist first built a good trusting relationship with Xiao Jin through open communication. This laid the foundation for later interventions. Then, the therapist guided Xiao Jin to appreciate Henri Matisse’s work *Polynesian Sky*. The therapist emphasized the “sense of space of sky and sea” created by the “flexible use of blue” in the work. This appreciation was meant to help Xiao Jin get rid of a depressive way of thinking. Through artistic association, he could experience emotional imagery of freedom and vastness [8].

2.3.2. Intervention effectiveness

The therapist interpreted that although the overall image still had a “sense of oppression” (blue, gray, and red dry-brush strokes), it “implied an unyielding sense of resistance.” “Blue and red form a strong contrast,” with the central red dry-brush strokes possibly symbolizing past conflicts or pain. However, the dried leaves pasted on top, the overall upward blue gradient, and the “freely growing” red branches (symbolizing Xiao Jin himself) revealed that after experiencing difficulties and receiving guidance, he wanted to break free from constraints, move forward under pressure, face difficulties calmly, and adopt a positive attitude [8].

Through comparison of the paintings and communication during the intervention, it was evident that Xiao Jin’s emotional state shifted from initially “deeply trapped, under great pressure, and constrained” to “oppression with resistance, hoping to break through after difficulties and face them positively.” His way of thinking also changed from passively depicting difficulties to actively expressing resistance and hope. After artistic inspiration and psychological counseling, Xiao Jin was able to more clearly express his state through painting and showed a willingness for positive change, indicating that his self-awareness had been positively influenced.

3. Conclusion

Painting color is both an important medium for adolescents to express their inner world and a key factor in triggering psychological transformation and promoting positive development. This result reveals the dual value of painting color in adolescent psychological intervention. On the expressive level, the choice and use of color can break through the limitations of verbal expression, allowing emotions and cognitions in the adolescent’s subconscious to be externalized in visual form. On the intervention level, the process of color harmonization and reconstruction itself has psychological

healing functions — for example, the use of symmetrical colors in mandala painting can enhance the sense of inner order, which is consistent with existing research conclusions that “the structural characteristics of artistic creation can alleviate anxiety.”

This study found that adolescents’ creative use of color usually corresponds to key nodes in psychological reconstruction — a phenomenon rarely mentioned in existing literature, suggesting that color innovation may be a potential indicator for evaluating intervention effects. Theoretically, this result provides new evidence for the “expression and transformation” mechanism of art therapy, showing that color is not only an expressive tool but can also actively participate in the psychological adjustment process. In practice, it can guide mental health workers to help adolescents achieve emotional catharsis and psychological construction by guiding them in color creation — for example, introducing thematic color painting tasks in group counseling. Future research can expand the sample size and combine quantitative tools to analyze the correlation between color characteristics and psychological indicators, further verifying the intervention mechanism of painting color.

Through the analysis of the case and relevant literature, this study strongly confirms the positive impact of painting color on adolescent mental health. As a powerful medium for psychological information transmission, color can not only help adolescents express and channel negative emotions, but also, through its inherent psychological effects and symbolic meanings, promote cognitive reshaping, self-awareness enhancement, and the formation of a positive attitude.

Authors contribution

All the authors contributed equally and their names were listed in alphabetical order.

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