

Intervention of Kinetic Art Therapy on Middle School Students' Test Anxiety

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Abstract

This study aims to explore the effects of comprehensive art therapy on test anxiety among middle school students. In this study, 10 students with typical test anxiety symptoms were selected to receive individual psychological counseling and art therapy before the test for a period of 3 to 12 months. Using grounded theory to analyze their art therapy process, using case analysis to analyze the changes in cognitive response, physiological arousal, behavioral performance and test performance of 10 students with test anxiety before and after counseling, and using classification analysis to analyze the intervention effect of group counseling on a large scale, validated the use of art therapy as a good intervention for alleviating test anxiety.

The research results show that: 1. Art therapy based on comprehensive theoretical models of psychodynamics, neuroscience, cognitive behavior, and humanism has a significant intervention effect on middle school students' test anxiety. 2. The core factor affecting middle school students' test anxiety is the fragility of self-regulation ability. 3. Whether it is long-term case intervention or short-term group consultation, art therapy has obvious curative effect. 4. The intervention of art test anxiety treatment needs to adopt structured, semi-structured and open treatment forms according to the different intervention objects.

Keywords: test anxiety; art therapy; psychodynamics

Introduction

Test anxiety has become one of the most important research topics in modern psychology and is by far the most widely studied form of anxiety in the academic literature. Test anxiety is a ubiquitous phenomenon, and most people in modern society have experienced this kind of assessment anxiety more or less. Because the test is the basis of many important decisions, and it is also the most frequent way and means that individuals encounter in primary and secondary schools, universities, jobs or other test assessments. already in the early 1950s, people began to study the structure of test anxiety to understand its nature, composition, origin, influencing factors, and consequences. Many studies have demonstrated the relationship between test anxiety and academic performance. von der Embse et al. (2018) conducted a meta-analysis of 238 empirical studies in this field over the past 30 years. The results showed that course test scores, grade point average and high-stakes test scores All of them were significantly negatively correlated with test anxiety, and the high-stakes test had the highest negative correlation coefficient with test anxiety. In view of the negative impact of test anxiety

on students, how to alleviate test anxiety has always been the focus of this field. For now, in view of these research results, a variety of interventions for alleviating test anxiety have been developed. From a narrow perspective, each therapy has its own limitations, and while some interventions may be helpful at any stage of the study-exam cycle, others are only effective at specific stages. In recent years, more and more attention has been paid to the intervention of art therapy for test anxiety, but the intervention method is often aimed at the relief of some single symptoms in some special cases. Looking at the literature research in recent years, there is no systematic and complete system to refer to.

This research is dedicated to the integration of the interdisciplinary theoretical system of test anxiety, deeply combining neuroscience, psychodynamics, developmental psychology, cognitive behavioral therapy and art therapy, and strives to make a more in-depth understanding and systematic treatment of test anxiety. Intervention is to understand the causes of test anxiety from the root, and form a theoretical model and intervention path for middle school students' test anxiety.

Research objectives

- 1.1 Integrating the theoretical model of middle school students' test anxiety
- 1.2 Deep analysis of the formation mechanism of test anxiety with art therapy theory
- 1.3 Construction of individual counseling model for middle school students' test anxiety art therapy

Literature review

In the current test anxiety research literature, Zheng and Chen (1990) from China proposed that the three factors of test anxiety are the basic dimensions, and 9 sub-dimensions are subdivided from the 3 basic dimensions. It is not difficult to find from the 9 sub-dimensions that they are independent of each other, and influence each other, cause and effect each other, and have a progressive and circular relationship with each other. In the nine subdimension subdivisions, a large number of studies have conducted extensive research on the nine subdimensions, treating test anxiety as a set of interrelated and interacting cognitive, emotional and behavioral components, current thinking and research indicate, that test anxiety is not a single event and needs to be conceptualized as a complex dynamic process consisting of many distinct temporal phases (Carver & Scheier, 1994; Covington & Omelich, 1988; Folkman & Lazarus, 1985). Thus, threat assessment, state anxiety levels, and the relationship of assessment and anxiety to performance outcomes may vary with the particular stage of the stressful encounter being considered. A large number of current studies focus on refining common factors and trying to find a unified treatment plan. In fact, test anxiety is a complex interdisciplinary anxiety cluster. Therefore, it is necessary to further study trait anxiety and state anxiety on the basis of common research. Perform in-depth analysis. Based on the division of nine sub-dimensions, this research framework uses psychodynamics, neuroscience, humanism, and cognitive-behavioral therapy as the theoretical basis for art therapy. Use psychodynamics to deeply examine the symptom types and motivation formation paths formed by the 9 sub-dimensions. Strive to form a cyclical influence on the psychodynamic model of

the 9 dimensions, improving some of the dimensions can affect other dimensions for linkage improvement.

Art Therapy and Neuroscience

neuroplasticity neuroplasticity the ability of a system to change its own structure in order to continuously adapt to changes in the external environment. traditional mindset It is believed that brain cell development tends to stop in adulthood. Recent studies have found that sensory stimulation and learning new skills promotes brain development, or neuroplasticity. Neuroplasticity research pioneer Bach-y-Rita (2001) nerves in the brain started after discovering father was back to normal through rehab after stroke Plasticity generates interest. He questioned a basic assumption of neuroscience at the time - that the localizationism, and the human brain as a network structure: the brain has many neural circuits, the so-called neural circuits are to do a certain job together the connection between neurons. If an important circuit is broken and cannot pass, the brain uses other trails to bypass it to reach the destination. Michael Merzenich is a leader in the field of neuroplasticity, founded the Posit Science company dedicated to improving the brain ability of the elderly and delaying cognitive aging Posit Science in the National Academy of Sciences The research report of the Journal of the Chinese Academy of Sciences (PNAS) ± pointed out that the elderly aged 60-87, after one hour a day, After 5 days a week for 8-10 weeks of auditory memory training, many people put their memory the clock was turned back about 10 years, and some people even turned back 25 years. Outstanding scientists in the frontier field of brain science, these guys did a lot of experiments in the late 1960s and early 1970s, Unexpected results were found. They found that the brain does something different each time Each of these activities changes the structure of the brain, and each practice changes the brain's neuroscience. On the way back, Merzenich borrowed a Canadian the concept of behavioral psychologist Donald Hebb. Heber used to be with Panfil Work together, is a very amazing scientist. In 1949, Donald Hebb proposed the idea that learning creates new connections between neurons. He believed that when two neurons continue to fire simultaneously (or is a firing that causes another neuron to fire as well), both neurons will have the changes in neurons, so the two neurons will be tightly connected together. Heber's theory. In fact, Freud (1987) mentioned it 60 years ago, and later the Neurology Department of the University of California Scientist Carla Shatz synthesized it into a neurological saying: neurons that fire together wire together. Donald Hebb's theory was that the structure of neurons could change with experience, and after Heiber, Merzenich 's new theory was that neurons on a map of the brain would change as they were together at the same time activated and bonded more tightly. If maps could be changed, Merzenich thought, then those There is hope for those born with brain problems, those with learning disabilities, psychological problems people with problems, strokes, and brain injuries who can construct new maps and form new associations Knots, as long as they make healthy neurons fire together, keeping them connected.

By MacLean (1990) and Panksepp (1998), it is proposed that there is an emotional program system in the core part of the brain, which is the internal mechanism of various specific emotions in the evolution of the brain. Emotions are subjective states of experience that arise within the overall machinery of the brain. Although emotion is closely related to memory and learning, it is not an epiphenomenon derived from them. The core program theory believes that the core organization of the brain not only shows the general activation state of the brain, but also has the nature of perceptual classification. Even within the simple approach-avoidance response of animals, specific categories of emotions, such as attachment or fear, are involved. However, researchers who believe in the experience of emotion in the brain believe that a full understanding of the neuroanatomy, physiology, and neurochemical basis of each

emotional system is essential before understanding any emotions. Therefore, at the current stage of research, the work of researchers who adopt the two theoretical orientations of GET and CAP has many connections, overlaps and intersections. Many findings in recent years are similar and consistent. From GET to CAP, regardless of the theory, it is recognized that emotion is an important component of the overall operation of the brain's consciousness work (see, Panksepp, 2000). The cognition is not only related to past memory experience, but also has emotional experience. The ever-changing stimuli from the outside world are finally integrated with their emotional meaning to people and their previous experience in the current brain processing to produce cognitive decisions and guide actions. Therefore, learning is not just the independent memory, attention and thoughts of pure subject knowledge, but also be affected by previous experiences and experiences, and these influences are often not realized. Therefore, the in-depth dynamics perspective on test anxiety needs to see the impact of candidates' learning career and growth experience on their perceptual memory and subconscious motivation on their learning.

Framework concept

Variable scope

This study is a qualitative study on test anxiety. This study takes music therapy, painting therapy, dance therapy, poetry therapy, metaphor therapy, artistic dreaming and other art therapy forms as independent variables, and takes SCL-90, TAS and SAS as reference measurements, mainly taking artistic motivation evaluation as the dependent variable; this study uses self-enhancement, object restoration, motivation activation, and performance improvement as mediating variables; intervention duration is the moderating variable.

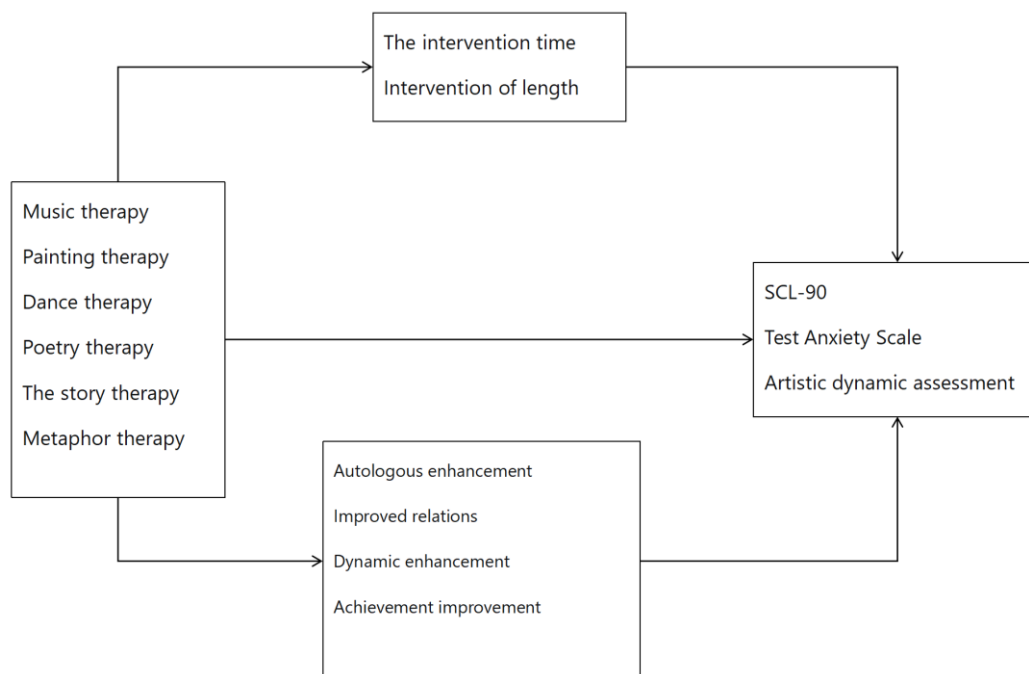


Figure 1. *variable scope*

Conceptual framework

In the analysis of 9 sub-dimensions, this study chooses cognitive response as the first starting point of the research, assuming that the cognitive response of test anxiety develops

linearly, and excessive worry forms people's self-defense, self-deprecation and excessive self-focus, it is bound to form obstacles and dislocations to the reception of external information, resulting in lack of attention allocation and selective forgetting, forming cognitive interference. If the research is at a horizontal position, cognitive behavioral therapy will start from cognitive therapy to correct cognitive biases and focus and memory training, but a large number of facts have proved that pure cognitive behavioral therapy can only achieve partial improvement. Insufficient interventions on the root causes of test anxiety. The effects of interventions have also been mixed.

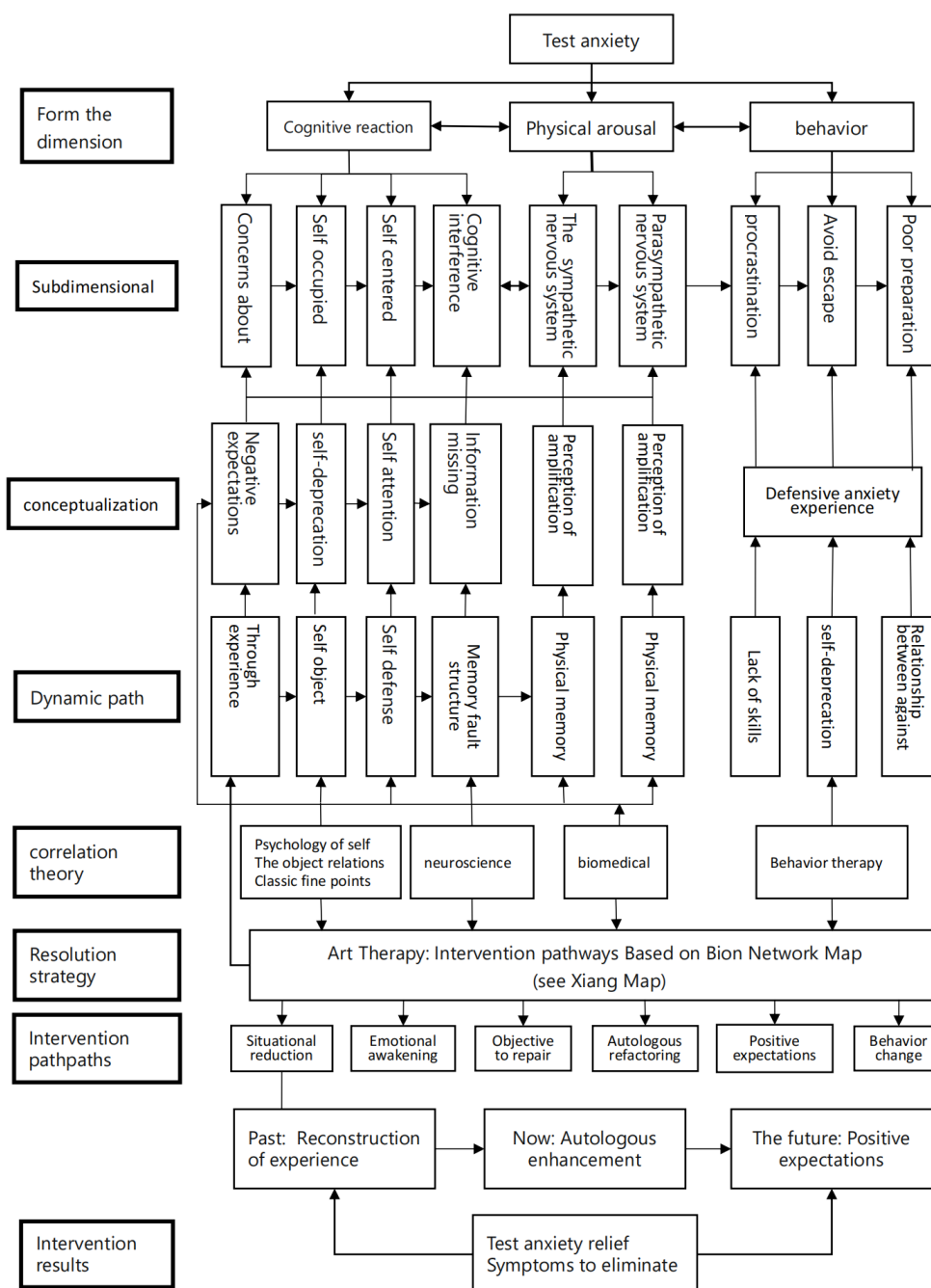


Figure 2. Conceptual framework

Therefore, this study starts from the unit of cognitive response to construct a psychodynamic model vertically. The understanding of the psychodynamics of worry and excessive self-focus is an examination of the psychodynamics of worry formed by past personal

experiences and collective subconsciousness. The negative expectations of exam failure formed by experience and the psychodynamic interpretation of excessive self-focus are that the self-organization structure of the self is fragile. In order to prevent self-fragmentation, individuals focus most of their energy on self-focus to ensure self-integration. In the process of self-formation, some traumatic experiences are repressed into the subconscious mind due to past exam failure experience and collective subconscious experience, forming selective forgetting and distraction, forming cognitive interference. Therefore, psychodynamics' understanding and solution to cognitive interference is to return to the origin, return to the place where the trauma was formed in the past, so that the fear, sadness, and depression that have been suppressed into the subconscious can be seen, the subconscious is conscious, and is held by the warm embrace of the therapist. And in-depth interpretation, repair traumatic experience, rebuild object relationship, reconstruct self-object structure, form self-enhancement, improve test coping ability and coping behavior, and relieve test anxiety from the root.

Research methods

Research path

This study takes the three factors of test anxiety as the starting point, integrates test anxiety-related disciplines to form a theoretical model, and uses art therapy as a form of treatment to conduct qualitative research on test anxiety through case studies, theoretical grounding, and case analysis to explore the deep impact of test anxiety Factors to construct a test anxiety case treatment model.

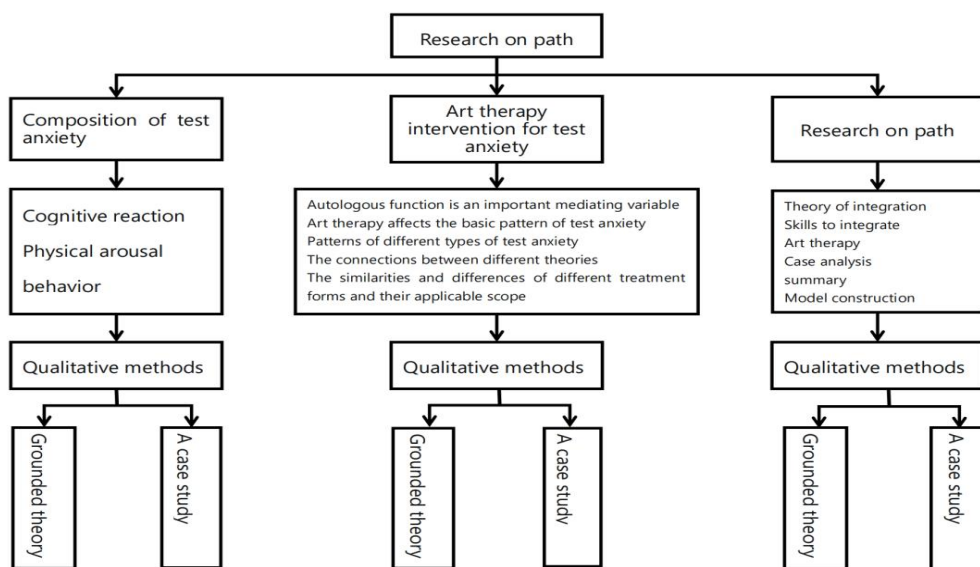


Figure 3. Research path

Measuring tools

4.2.1 Questionnaire test TAS, SAS, SCL-90

4.2.2 Artistic motivation assessment

- (1) The world outside the window
- (2) The top of Mount Tai
- (3) Underwater world
- (4) Subconscious Lianliankan

Table 1. *Case Statistics Summary*

serial number	name	gender	grade	Number of consultations	Cognitive Interference	Test anxiety			Art Therapy Motivational Intervention Dimensions			Art Therapy Forms	
						Physiological arousal	behavioral response	psychological test	emotional capacity	autoregulation	relation		academic performance
1.	AJ	male	high school	3	powerless negative expectations	high tension	procrastinate, avoid	TAS 35 points	Enhanced Emotional Perception	self differentiation Self-stabilization	object relations enhance	physical examination 85-98 points	
2	Y P	male	first day	10	Inattention, memory loss, negative anticipation	Exam stress, physicalization	avoidance, withdrawal, passive-aggressive	TAS 33 points	Emotional Perception Clarification and Enhancement	Improvement of self-value and self-regulation ability	Enhanced object relations	Ranked in the top 5 in the final exam class, improved by 10	music therapy painting therapy
3	LT	male	Second grade	12	Mistakes when one "moves"; lack of observation and memory	rigid body, unresponsive	avoid escape	TAS 32 points	Enhanced Emotional Awareness	Sliding from self-deprecation to self-identification	Enhanced objective relationship	320-370	music therapy painting therapy
4	GY	male	Second grade	10	Concentration, memory, grade decline	Insomnia	self-harm	moderate depression	Enhanced Emotional Awareness	self-doubt to self-identity autogenous elasticity	object reconstruction		music therapy painting therapy Sandbox therapy
5	ZY	Female	junior high school	16	Concentration, poor memory, decreased grades, negativity	bodily, Insomnia	dodge exams, frequent leave	SCL-90 severe anxiety TAS 34 points	Enhanced Emotional Awareness	Self-worth awakens self-stability improvement	interpersonal relationship improve, object reconstruction	520-557	music therapy writing therapy

													painting therapy
6	XK	Female	junior high school	16	negative expectations	somatic	refusal to study self harm	bipolar disorder	Enhanced Emotional Perception	self cohesion self differentiation	Enhanced object relations	entrance examination 387	music therapy dance therapy
7	xc	Female	junior high school	15	Inattention, memory loss, negative anticipation	difficulty falling asleep	Addicted to mobile phones, living in a school rental house, barely going to classrooms in the second semester of the third year of junior high school	SAS 64 points	Increased awareness of emotional flow	Enhanced self-function and improved self-regulation ability	Relaxation of parent-child relationship	Successfully participated in the senior high school entrance examination, was admitted to a public school, and completed the consulting goal	music therapy painting therapy

8	ZSP	Female	high school	17	Difficulty concentrating, memory loss, extremism	Difficulty falling asleep, decreased appetite	Avoid retreat, stay in the dormitory without class	SDS 68 points SAS 60 points	Increased emotional perception and decreased anxiety	Self-cohesion, improved self-stability	object reconstruction	The score increased by 90 points, and the college entrance examination scored 652 points	music therapy writing therapy painting therapy
9	WY	Female	high school	17	Concentration, poor memory, severe decline in grades	upset stomach	Frequently ask for leave to go home to rest, tense relationship	SCL-90 somatization, depression, anxiety factors > 3 points SAS 67 points	Anxiety drops	Self-differentiation, improved self-stability	interpersonal relationship improve, object reconstruction	score increased by 2000, and the college entrance examination was admitted to 985 universities	music therapy dance therapy
10	LS	Female	High school repeat students	18	Inattention, memory loss, negative anticipation	Difficulty falling asleep Exam stress	passive aggressive avoidance	TAS36	Enhanced Emotional Awareness	self cohesion From self-deprecation to self-identification	Improve interpersonal conflicts and reconstruct object relationships	Successfully admitted to the target university with a score of 490 in the college entrance examination	music therapy painting therapy

Population and Sample

Case study. Taking 10 junior high school students as case study objects, The main research objects of junior high school and senior high school.

Case interview. 30 individual case reports of art therapy intervention on test anxiety were collected online, and 10 comprehensive and representative empirical cases were selected as case study data.

Research results

In this study, 10 common student cases were selected from 30 students with test anxiety as case study samples, and the following research results were obtained through case tracking and analysis of 10 cases of short-term or staged treatment:

Art therapy has a significant effect on candidates with severe test anxiety

In the work of assisting some candidates, the candidates have done SAS and other assessments in the early and late stages, and the results show that the anxiety of the students has indeed dropped significantly after repeated weekly assistance; at the same time, combined with parent reports, students The feedback from the consultation and the counselor's own understanding of the candidate's situation have indeed eased the candidate's emotions, improved their learning situation, and significantly improved their academic performance.

Art Therapy Theoretical Model of Test Anxiety

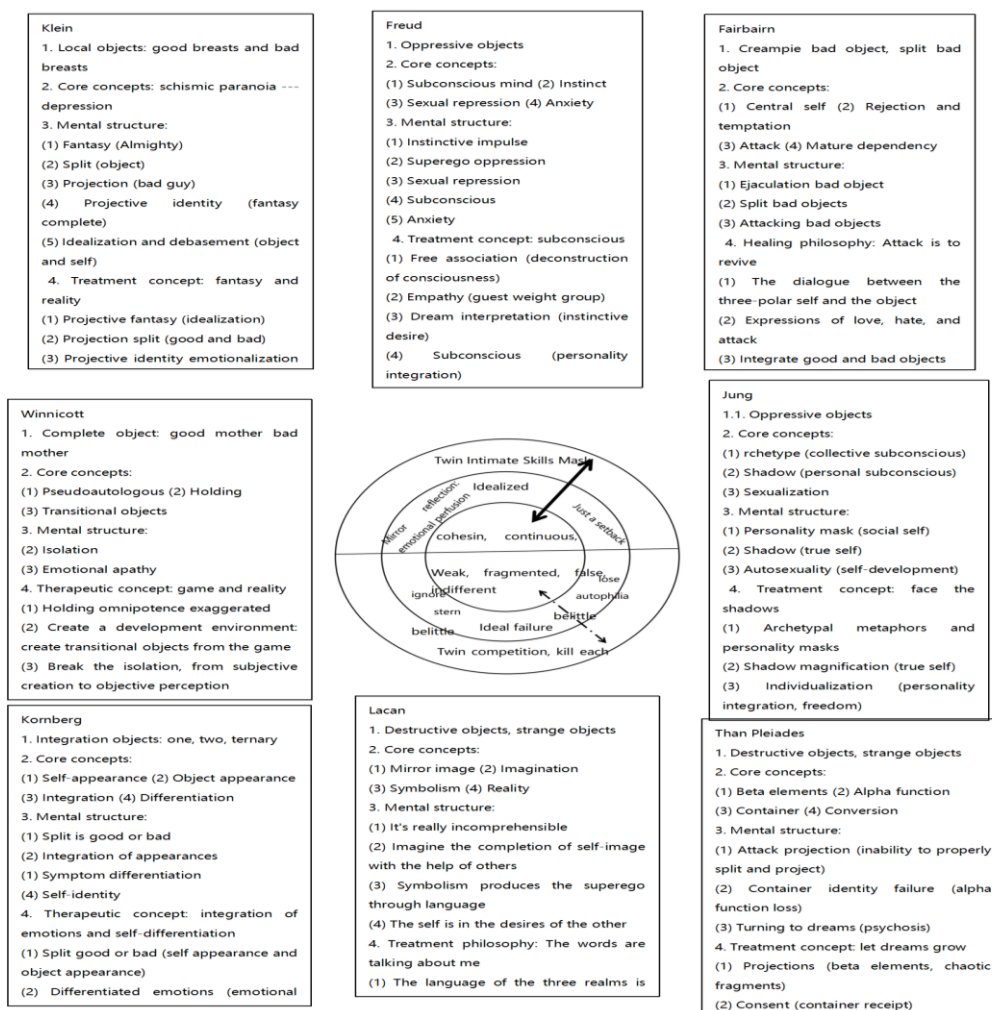


Figure4. Theoretical model of art therapy integration

After in-depth research and analysis of ten cases, this study integrates classic psychoanalysis, object relations, self psychology, and postmodern psychoanalysis into an integrated theoretical model, understands the root causes of middle school students' test anxiety from a dynamic perspective, and forms an in-depth intervention mechanism, achieving a significant intervention effect.

Deep analysis of the formation mechanism of test anxiety with art therapy theory

After in-depth research and analysis of individual cases, this study believes that the main mechanism for the formation of middle school students' test anxiety is the instability of the self-organization structure, the inflexibility of the self-regulation function, and the inability to cope with the huge test pressure well, resulting in instability in the test preparation process, self-psychology. The three poles of learning about the self are composed of the core self at the center, the idealized selfobject at the second level, and the companion twin selfobjects at the periphery to form a tripolar self. The factors that affect the poor self-function development of middle school students are the early object relationship, the real teacher-student relationship, Three-level selfobjects in relationship and classmate relationship. Art therapy first awakens the emotional memory and situational memory of early memories through art therapy, helps middle school students quickly clarify subconscious conflicts, and builds new relationships through art therapy media, art therapists, and visitors. New relationships ease and repair early experiences, the impact on the visitor forms a corrective emotional experience, thereby completing the reconstruction of the self-object relationship, enhancing self-function, and calmly coping with the exam.

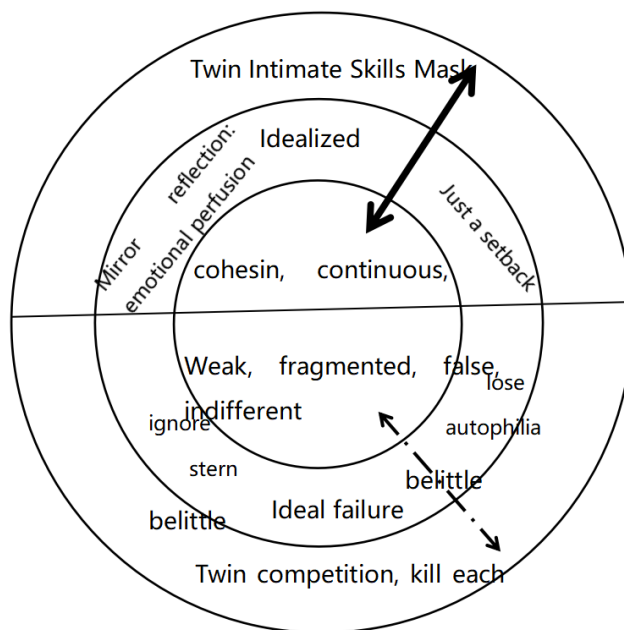


Figure 5. Tertiary selfobject

Individual counseling model of art therapy for middle school students' test anxiety

After nearly ten years of art therapy intervention on test anxiety, a systematic intervention model of art therapy on test anxiety was extracted. First, test anxiety was measured. There are three specific measurement methods. The first scale tests anxiety, depression and physical Severity, the second type is dynamic interview, and the third type uses art therapy projection method to carry out structured metaphor, semi-structured, and open projection to extract subconscious information. Diagnose motivation based on art projection

and motivation interview, and then deconstruct the artwork to understand the path of neurotic anxiety. Form the treatment hypothesis, the third step is to carry out the core treatment stage of art therapy, use the psychodynamic hypothesis model to select the integration theory model for the corresponding integration treatment, and evaluate and intervene simultaneously. At the end of the treatment, research and analysis will be carried out to form the core driving force model of test anxiety, whether the choice of treatment method is reasonable and why it produces curative effect, and finally evaluate the effect and analyze the influencing factors.

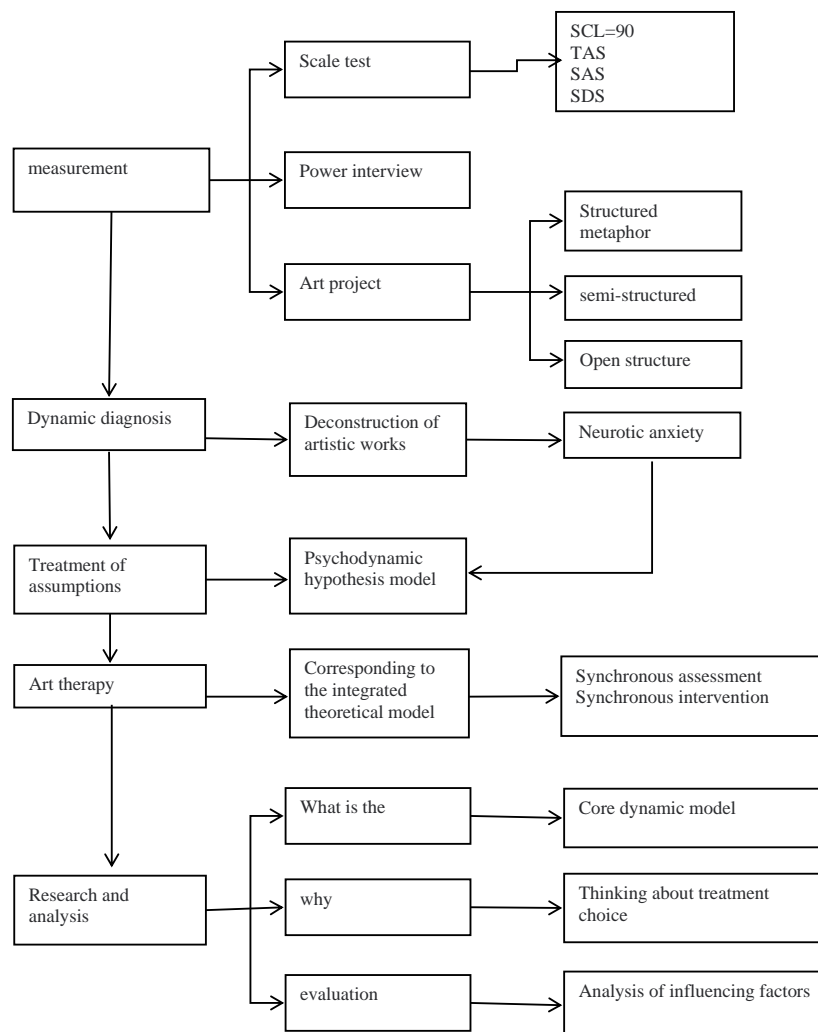


Figure 6. Exam Anxiety Art Therapy System Model

Analysis conclusion

In the clinical cases studied in this project, art therapy intervention has a good effect on the recovery of emotional function, improvement of interpersonal and social function, improvement of self-worth and improvement of cognitive, physical and mental symptoms. At the same time, there are relevant supporting conclusions on the curative effect of art therapy intervention at home and abroad.

Restoration of emotional function. Studies abroad have shown that 70% to 90% of mental illnesses are caused by negative emotions and stress. In recent years, more and more

scholars believe that art therapy has a prominent effect on the recovery of patients' emotional functions (Cheng & Liu, 2009). In the study of painting art therapy, Gussak (2007) found that painting therapy can significantly reduce the depressive symptoms of prisoners through the study of prison inmates. Similarly, Forzoni et al. (2010) also came to the same conclusion. Plecity et al. (2009) gave patients with clinical diseases a standardized questionnaire to measure their emotional and physical symptoms after painting and art therapy. The quantitative assessment showed that the patients' physical symptoms decreased while their positive emotions increased. For children who have lost their loved ones, studies have also confirmed that sandbox games can help them express their grief. In addition, D33 such as Chen et al. (2013) in China found that mandala painting has the function of improving mood by instructing 196 college students to fill in the mandala characteristic scale after mandala painting.

Improvement of social functions. Pasiali's (2012) research found that music therapy is beneficial in promoting harmonious interpersonal relationships (Pasiali, 2012). In another study, Gerding (2009) found that painting art therapy can effectively increase their communication and social skills, thereby achieving the effect of relieving stress. In China, based on questionnaires, combined with return visits by consultants, interviews with counselors, etc., Jili found that restrictive group sand table intervention can effectively solve the problems of interpersonal adaptation of college freshmen. In a before-and-after controlled study on social anxiety among college freshmen, Chen et al. (2006) found that group sandbox therapy can effectively relieve the anxiety of those with high social anxiety. Through the comparison of behavior therapy and Orff music therapy, Zhang and Zhou (2004) of the Central Conservatory of Music found that music therapy has an effect on the mental ability and social adaptability of mentally handicapped children in their research on the education of mentally handicapped children.

Improvement of self-concept. Many research results in the West have shown that art therapy can effectively affect the individual's self-esteem experience and self-awareness. By studying the mental health of children who are about to drop out of school, Jackson (2003) found that through the intervention of art therapy, children's learning experience can be improved and their self-esteem development can be effectively promoted. For obese patients with eating disorders, Jackson (2003) found that low levels of self-awareness and self-esteem will directly hinder their clinical treatment effects, and art therapy can fully mobilize the patients' own internal resources and promote the development of their self-awareness. Develop and improve self-esteem levels. Jing (2011) found in the research on film appreciation that the scientificity, feasibility and effectiveness of the film aesthetic appreciation activity program and the selected film materials can not only effectively enhance the self-acceptance level of secondary vocational students, but also effectively improve their mental health. Zou and Chen (2012) used painting therapy group counseling to explore the feasibility and applicability of painting therapy in improving self-awareness of college students.

Restoration of cognitive function. As a way of psychological counseling, art therapy can not only promote the recovery of patients' cognitive level, but also enable them to better develop themselves. Anzules et al. (2007) have shown that painting art therapy can improve the self-concept of hospitalized children, promote the self-esteem development of drop-out children, and improve their learning experience. .

In addition to surgical treatment, Denise and Meloda[29] treated 3 children with obsessive-compulsive disorder aged 6 to 8 through sandbox games. effect. In domestic research, Zhang and Gu (2009) groaned 3 In the process of painting art therapy for children with autism, he found that it can promote the development of mental health and the recovery

of cognitive function of children with autism. Chen et al. (2007) believe that combining cognitive guidance with group sand table therapy is an effective way to solve problems. Cui and Huang (2013) intervened with mentally handicapped children with sand table therapy, and the results showed that sand table therapy had a significant effect on improving the cognition and language of mentally handicapped children. Liu (2011) expounded the relationship between multiple disorders and multiple music stimuli, and believed that music activities organized by using multiple sensory stimuli can help improve the cognitive abilities of mentally handicapped patients.

Improvement of mental symptoms. Art therapy is beneficial to improve the mental symptoms of patients. Numerous studies at home and abroad have shown that it has a significant effect on the improvement of mental illness symptoms, especially in relieving the symptoms of schizophrenia patients, anxiety and depression patients. Richardson et al. (2007)

Ali et al. [36] found that art therapy is very necessary for post-stroke patients with anxiety and depression, and can help patients explore post-stroke life in an open environment. Wang et al. (2011) treated 30 patients with depression for 3 months with routine treatment and nursing combined with painting therapy, found that painting therapy can promote recovery and restore social function in patients with depression. In another study of patients with chronic schizophrenia in the community, the patients were randomly divided into a conventional treatment group and a music therapy group, in which the music therapy group was given 8 weeks of music therapy in addition to maintaining the conventional psychiatric drug treatment. The results of the study showed that Through music therapy intervention, it is more conducive to the relief of depression and anxiety and the improvement of the quality of life of patients with chronic schizophrenia in the community (Zhu et al., 2012).

Improvement of physical symptoms. Art therapy can not only improve the mental symptoms of patients with mental illness, but also reduce the physical symptoms of clinical diseases, especially for cancer patients. Karagozoglu et al. (2013b) conducted music therapy combined with visual image induction on chemotherapy patients, and found that art therapy can effectively reduce the symptoms and emotions of patients such as nausea, vomiting, and anxiety. Hospice in Taiwan In the nursing ward, Lin et al performed art therapy on 177 patients with advanced cancer and found that patients can benefit from the appreciation of visual art and the creation of artworks (Karagozoglu et al., 2013a). Rao et al. (2009) recruited 79 confirmed HIV-infected patients for research and found that direct participation in art therapy was better than watching art

Limitations of the study

Urgent need to strengthen empirical research. The International Art Therapy Association pointed out that art therapy research mainly adopts a single-subject experimental design, and the biggest controversy in expressive art research is the lack of empirical evidence. Although many studies have provided data showing that kinetic art therapy does improve many mental health problems, there is still a lack of sufficient data to support it. Agell (1997) believed that most of the research on art therapy in the United States lacked design, mainly anecdotal and case studies, and many published articles by art therapists were not based on observation or experimentation (Price, 2009).

Future Research Direction and Significance

Prospect and significance of future research in the mainland. At present, there are many studies in foreign countries and Taiwan to explore the application of art therapy in primary and middle school students, such as life adaptation of children whose parents are divorced, intervention on the behavior of children with ADHD, group counseling for children with depression, and improving the self-concept of vulnerable children, etc. There are many, and most of the studies in mainland China are aimed at college students, and very few are aimed at primary and middle school students (Chen, 2009; Hong, 2014; Huang et al., 2011; Liu, 2010).

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