

# Study on the clinical efficacy of painting therapy of patients with anxiety disorders

JICHONG HOU<sup>1\*</sup>, RUIFANG ZHANG<sup>2\*</sup>, JINMEI AN<sup>3</sup>, HEQING ZHANG<sup>1</sup>

<sup>1</sup>Department Fourth of Psychiatry, Hengshui Seventh People's Hospital, Hengshui, China; <sup>2</sup>Department of Radiotherapy, Hengshui People's Hospital, Hengshui, China; <sup>3</sup>Clinical Laboratory, Hengshui Seventh People's Hospital, Hengshui, China.

**Summary. Aims.** This study analyzed the application value of drug combined painting therapy for patients with anxiety disorder by observing the changes in patients' mental and social functions. **Methods.** 400 cases with anxiety disorder were recruited, and randomly divided into the experimental group and the control group with 200 cases in each group. Patients in the control group received drug therapy alone, while experimental group was combined with painting treatment on the basis of control group. The Nurses Observation Scale for Inpatient Evaluation (NOSIE) was used for the evaluation of mental and social functioning. Clinical efficacy was evaluated according to the degree of reduction in the Hamilton Depression Scale (HAMD) score. **Results.** After 8 weeks of treatment, the experimental group had a lower HAMD score than those in the control group. After 8 weeks of treatment, mental and social functions in both groups improved significantly. And the social competence, social interest and personal cleanliness of the experimental group were better than those of the control group, and the degree of irritability, retardation and depression were lower than those of the control group. In comparison with the control group, the experimental group had a higher cure rate and remarkable response rate. **Conclusions.** Painting therapy combined with drug therapy can relieve anxiety symptoms of patients with anxiety disorder, improve their mental and social functions, and improve clinical efficacy.

**Key words.** Anxiety disorder, painting therapy, HAMD score, NOSIE score.

**Riassunto. Obiettivi.** Questo studio ha analizzato il valore applicativo della terapia pittorica combinata con farmaci per i pazienti con disturbo d'ansia, osservando i cambiamenti nelle funzioni mentali e sociali dei pazienti. **Metodi.** Sono stati reclutati 400 casi con disturbo d'ansia e divisi casualmente nel gruppo sperimentale e nel gruppo di controllo con 200 casi in ciascun gruppo. I pazienti del gruppo di controllo hanno ricevuto la sola terapia farmacologica, combinata nel gruppo sperimentale con il trattamento pittorico. La Nurses Observation Scale for Inpatient Evaluation (NOSIE) è stata utilizzata per la valutazione del funzionamento mentale e sociale. L'efficacia clinica è stata valutata in base al grado di riduzione del punteggio della Hamilton Depression Scale (HAMD). **Risultati.** Dopo 8 settimane di trattamento, il gruppo sperimentale aveva un punteggio HAMD inferiore a quello del gruppo di controllo. Dopo 8 settimane di trattamento, le funzioni mentali e sociali in entrambi i gruppi sono migliorate in modo significativo. E la competenza sociale, l'interesse sociale e la pulizia personale del gruppo sperimentale erano migliori di quelli del gruppo di controllo, e il grado di irritabilità, ritardo e depressione erano inferiori a quelli del gruppo di controllo. Rispetto al gruppo di controllo, il gruppo sperimentale ha avuto un tasso di guarigione più elevato e un notevole tasso di risposta. **Conclusioni.** La terapia pittorica combinata con la terapia farmacologica può alleviare i sintomi di ansia dei pazienti con disturbo d'ansia, migliorare le loro funzioni mentali e sociali e migliorare l'efficacia clinica.

**Parole chiave.** Disturbo d'ansia, punteggio HAMD, punteggio NOSIE, terapia pittorica.

## Introduction

With the quickening pace of life and the increasing pressure of life, the incidence of anxiety disorder is increasing year by year<sup>1,2</sup>. Anxiety disorder is a common neurological disease, clinical mostly showing nervous worry, restlessness, continuous anxiety and other symptoms<sup>3</sup>. In recent years, with the continuous development of the economy, work pressure is increasing, and the incidence of anxiety disorder in people's life also showed a rising trend<sup>4</sup>. According

to the World Health Organization, about 320 million people worldwide suffer from depression, accounting for 4.4% of the world's population<sup>5</sup>. Antidepressants are the most commonly used clinical treatment for depressive disorder, but their efficacy is not satisfactory when used alone<sup>6</sup>. There are a variety of adverse reactions and even dependence and withdrawal reactions in the treatment of antidepressants, so there is no ideal clinical treatment at present.

Painting therapy is a form of psychotherapy mediated by painting<sup>7,8</sup>. It attempts to stabilize and regulate emotions through painting, healing illness in the pursuit of artistic beauty<sup>9</sup>. Existing studies have proved that painting psychotherapy has a good effect on dealing with emotional conflict, trauma and

\*The first two authors contributed equally.

loss<sup>10,11</sup>. Brinck<sup>12</sup> reported on the study of painting psychotherapy in the expression of emotional conflict, and found that painting is beneficial to an individual's emotional and value judgments. In addition, Mandić-Gajić and Špirić<sup>13</sup> investigated the role of painting in trauma therapy and found significant efficacy. Compared with traditional psychotherapy, painting therapy uses nonverbal symbolic means to express the hidden content of the subconscious, which is easy for patients to accept and conducive to the collection of real information<sup>11</sup>. The painting therapy test can be used multiple times without compromising diagnostic accuracy<sup>10</sup>.

Based on this background, this study analyzed the application value of drug combined painting therapy for patients with an anxiety disorder by observing the changes in patients' mental and social functions.

## Materials and methods

### STUDY POPULATION

400 cases with anxiety disorder who were admitted to Hengshui Seventh People's Hospital from March 2019 to March 2021 were recruited for the study. All patients were diagnosed under the guidance of the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5)<sup>14</sup>. Inclusion criteria: 1) Meet the diagnostic criteria for anxiety disorders in DSM-5; 2) 18 years of age or older. Exclusion criteria: pregnant and lactating women; patients with mental retardation and serious physical diseases that can not participate in the study; poor medication compliance. The subjects were randomly divided into experimental group and control group with 200 cases in each group.

### GROUP THERAPY

Patients in the control group received drug therapy alone, oral Deanxit (Denmark Lingbei Pharmaceutical Co., LTD., H20130126), two tablets each time, once a day; Oral alprazolam (Heilongjiang Rui-gong Pharmaceutical Co., LTD., National drug Approval H20010588), one tablet each time, three times a day. The experimental group was combined with painting treatment on the basis of control group, 50 minutes twice a week for 8 weeks.

### ASSESSMENT OF MENTAL AND SOCIAL FUNCTIONING

The nurses Observation Scale for Inpatient Evaluation (NOSIE) was used for evaluation of mental and social functioning, including 7 factors including personal neatness, social interest, psychiatric performance, social ability, irritation, depression and tardiness. According to the frequency, the 5-grade scoring

method was used, the higher the score of personal cleanliness, social interest and social ability, the better the cue function, while the lower the score of psychosis, irritation, depression and tardiness, the better the cue function.

### CLINICAL EFFICACY

Hamilton Depression Scale (HAMD), developed by Hamilton in 1960, is the most widely used scale in clinical evaluation of depression at home and abroad. Clinical efficacy was evaluated according to the degree of reduction of HAMD score. Reduction of HAMD score of more than 75% indicates cure; the degree of reduction ranging 50%-75% indicates remarkable response; 25-50% mark reduction indicates slight response; mark reduction that less than 25% indicates ineffective. Total effective rate = (number of cured cases + number of remarkable response cases) / total cases 100%.

### STATISTICAL METHOD

SPSS 21.0 software was used for statistical analysis. Quantitative materials were expressed as mean and standard deviation (SD), and t test was used for the difference comparison. Qualitative data were represented by sample number and percentage and  $\chi^2$  test was used for the comparison. P value less than 0.05 indicates a significant difference.

## Results

### GENERAL CONDITIONS OF THE STUDY POPULATION

A total of 200 cases with anxiety disorder were collected, aged ranging from 19-67 years old. As shown in table 1, there were 108 males and 92 females in the control group. The number of men and women in the experimental group was 105 and 95, respectively. The BMI of the control group was  $22.83 \pm 3.74$ , with a mean age of  $39.75 \pm 10.87$  years old. The BMI of the experimental group was  $23.09 \pm 3.76$ , with a mean age of  $41.39 \pm 12.61$  years old. The control and experimental groups were age and gender-matched, and the BMI also showed no significant difference between the two groups.

### COMPARISON OF HAMD SCORE BETWEEN THE TWO GROUPS BEFORE AND AFTER TREATMENT

As recorded in table 2, before the intervention, there was no significant difference in HAMD scores between the two groups ( $p > 0.05$ ). After 8 weeks of treatment, HAMD scores in both groups were lower than before ( $p < 0.01$ ). Furthermore, after 8 weeks of treatment, the experimental group had the lower HAMD score than those in the control group ( $p < 0.01$ ).

**Table 1.** Comparison of general conditions between the two groups.

Items	Control group (n=200)	Experimental group (n=200)	P value
Sex, %			0.764
Male	108 (54.00)	105 (52.50)	
Female	92 (46.00)	95 (47.50)	
Age, years	39.75±10.87	41.39±12.61	0.162
BMI, kg/m <sup>2</sup>	22.83±3.74	23.09±3.76	0.486

Legend: BMI= body mass index.

**Table 2.** Comparison of HAMD score between the two groups before and after treatment.

Group	Control group (n = 200)	Experimental group (n = 200)	P value
Before treatment	33.79±2.14	34.12±1.88	0.10
After treatment	9.17±0.97	7.35±0.84	<b>&lt; 0.01</b>
P value	<b>&lt; 0.01</b>	<b>&lt; 0.01</b>	

Legend: HAMD= Hamilton Depression Scale. Bold indicates significant differences.

### COMPARISON OF MENTAL AND SOCIAL FUNCTIONING SCORES BETWEEN THE TWO GROUPS BEFORE AND AFTER TREATMENT

As observed in table 3, there was no significant difference in the scores of mental and social function factors between the two groups before treatment ( $p>0.05$ ). After 8 weeks of treatment, mental and social functions in both groups improved significantly ( $p<0.01$ ). Moreover, after 8 weeks of treatment, the scores of social competence, social interest and personal neatness in the experimental group were higher than those in the control group, while the scores of irritability, retardation and depression were lower than those in the control group ( $p<0.05$ ), suggesting that the social competence, social interest and personal cleanliness of the experimental group were better than those of the control group, and the degree of irritability, retardation and depression were lower than those of the control group. There was no statistically significant difference between the two groups in manifest psychosis scores ( $p>0.05$ ).

### COMPARISON OF CLINICAL EFFICACY BETWEEN THE TWO GROUPS

In comparison with the control group, the experimental group had a higher cure rate and remarkable

**Table 3.** Comparison of NOSIE scores between the two groups before and after treatment.

Group	Control group (n=200)	Experimental group (n=200)	P value
<b>Social competence</b>			
Before treatment	11.99±1.36	12.09±1.51	0.518
After treatment	29.43±3.02	30.09±3.31	<b>0.036</b>
P value	<b>&lt; 0.01</b>	<b>&lt; 0.01</b>	
<b>Social interest</b>			
Before treatment	10.99±1.19	11.01±1.16	0.855
After treatment	22.58±1.90	29.90±1.85	<b>&lt; 0.01</b>
P value	<b>&lt; 0.01</b>	<b>&lt; 0.01</b>	
<b>Personal neatness</b>			
Before treatment	13.15±1.55	12.94±1.50	0.194
After treatment	19.72±2.31	26.54±3.06	<b>&lt; 0.01</b>
P value	<b>&lt; 0.01</b>	<b>&lt; 0.01</b>	
<b>Irritability</b>			
Before treatment	32.94±1.52	33.03±1.49	0.547
After treatment	20.09±0.92	14.53±0.66	<b>&lt; 0.01</b>
P value	<b>&lt; 0.01</b>	<b>&lt; 0.01</b>	
<b>Manifest psychosis</b>			
Before treatment	16.89±1.50	17.03±1.50	0.355
After treatment	9.29±0.83	9.19±0.81	0.256
P value	<b>&lt; 0.01</b>	<b>&lt; 0.01</b>	
<b>Retardation</b>			
Before treatment	20.01±1.49	19.87±1.47	0.356
After treatment	14.01±1.04	10.93±0.81	<b>&lt; 0.01</b>
P value	<b>&lt; 0.01</b>	<b>&lt; 0.01</b>	
<b>Depression</b>			
Before treatment	18.42±1.65	18.62±1.47	0.214
After treatment	11.05±0.99	9.31±0.73	<b>&lt; 0.01</b>
P value	<b>&lt; 0.01</b>	<b>&lt; 0.01</b>	

Legend: bold indicates significant differences.

response rate, while owned a lower slight response rate and ineffective rate, and the difference reached a significant level ( $p<0.01$ ) (table 4). In addition, the total effective rate of the experimental group was higher than that of the control group ( $p<0.01$ ).

### Discussion

Some studies have found that art painting has a significant effect on emotional disorders, especially mild to moderate depression<sup>15</sup>. Gussak<sup>16</sup> reported the efficacy of painting art intervention therapy for priso-

**Table 4.** Comparison of clinical efficacy between the two groups (n, %).

Group	Cure rate	Remarkable response rate	Slight response rate	Ineffective rate	Total effective rate
Control group	64 (32.00)	41 (20.50)	54(27.00)	41 (20.50)	105 (52.5%)
Experimental group	92 (46.00)	63 (31.50)	25 (12.50)	20 (10.00)	155 (77.50%)
P value	<b>&lt; 0.01</b>				<b>&lt; 0.01</b>

Legend: bold indicates significant differences.

ners, and the results showed that painting significantly alleviated the depressive symptoms of prisoners. Recently, painting therapy has been widely applied in to tumor patients, and plays a very good supporting role in clinical psychology of patients, especially children<sup>17</sup>. In this study, patients in the experimental group were given painting therapy in addition to drug therapy. Painting can express the unconscious mind of human beings. Painting is a treatment method for anxiety patients to explore their psychology, with creative and reflective functions. The treatment process has low requirements on hardware, which is especially suitable for group therapy and has the advantages of simple operation<sup>18</sup>. When divergent thinking is created, the patients can apply any color and use their imagination, and the patient will feel satisfaction, equalness, joy, love, etc. At the same time, patients can freely express their negative emotions in the process of painting. If patients are aware of these emotions, these negative emotions will be activated by transformation and processing. In addition, through painting, patients can release their confused minds and create relaxation and calm<sup>19</sup>. Team interactive painting penetrates into patients' minds in an interactive way and enables patients to obtain self-healing through self-awareness, which is helpful to relieve anxiety, stabilize emotions and stimulate individual potential<sup>20</sup>. The results of this study showed that the HAMD score of patients in the experimental group was lower than that in the control group, indicating that painting combined with drug therapy can improve patients' depression and anxiety, which is consistent with the above research reports.

In recent years, studies have found that a considerable number of anxiety patients have their symptoms relieved after medication and psychological intervention<sup>20,21</sup>. However, some patients will lose their previous vitality and emotion, and cannot fully recover to the state before anxiety, which seriously interferes with normal life, interpersonal communication and social adaptability. In this study, through painting courses with different themes, individuals constantly explore their inner world through artistic creation and have more understanding of their own core. Art is therapeutic, and combined with medicine has a synergistic therapeutic effect, so that individuals can better deal with their own problems in

various aspects, improve their self-value and happiness, and recover early to return to society<sup>18</sup>. Leurent et al.<sup>22</sup> believed that group art therapy can effectively improve the social communication and communication ability of patients with mental illness. In this study, the mental and social function scores of patients in the study group after treatment were significantly better than those in the control group except for the factor of psychiatric manifestation. It can be confirmed that painting therapy has a significant effect, can significantly improve the social adaptability of patients with depression disorder, and improve the total effective rate of intervention<sup>20,23</sup>. The psychiatric manifestations of the study group and the control group were significantly improved after treatment, but the difference was not statistically significant. It is possible that the painting treatment itself did not improve the psychiatric performance, or that the psychiatric performance of the participants was not the main manifestation of anxiety disorder. At the same time, it can be predicted that painting treatment has no therapeutic significance for the diseases mainly manifested by psychotic symptoms, such as schizophrenia, and schizoaffective disorder. However, it has obvious therapeutic significance for emotional disorders such as persistent mood disorder, anxiety disorder and adaptation disorder, which are mainly manifested by social interest, personal tidiness, tardiness and depression, but more studies are needed to confirm.

Previous studies have shown that on the basis of drug therapy, combined with targeted psychological counseling, depression symptoms can be better alleviated and efficacy can be improved<sup>7</sup>. This study showed that the overall effective rate of the study group was 77.50%, higher than that of the control group 52.50%, suggesting that the efficacy of drugs combined with painting in the treatment of anxiety disorder is better than that of drug therapy alone, and has obvious effects on relieving depressive symptoms, mental and social functions.

This study does have several limitations that needed to be considered when interpreting the findings. First, the present clinical findings are limited to the small sample size, which should be verified in other larger study populations. In addition, painting therapy is the only psychotherapy used in this study:

other types of psychotherapy should be taken into consideration in future, to compare their clinical efficacy with painting therapy.

In conclusion, painting therapy combined with drug therapy can relieve anxiety symptoms of patients with anxiety disorder, improve their mental and social functions, and improve clinical efficacy. In view of the findings in this study, painting does not affect psychiatric performance, and the reasons for this need to be further explored in future studies.

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Corresponding author:

Ruifang Zhang

Department of Radiotherapy

Hengshui People's Hospital

Renmin Dong Road

Hengshui, Hebei, 053000, China

E-mail: zhangruifang7@163.com