

# EFFECT OF DANCE EDUCATION ON MOOD IMPROVEMENT IN PATIENTS WITH ANXIETY DISORDER

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## SUMMARY

**Background:** Psychological theory will have a significant impact on the objectives of dance education, including the expansion of dance innovative thinking, the cultivation of dance professional skills and general skills. At present, the main problems of dance education are as follows: the teaching method is single, paying too much attention to the teaching content and ignoring the students' mental health. In view of these problems, it is of positive significance to put forward a dance education combined with psychology. Firstly, the teaching is carried out through the method of multi-sensory channel, then different teaching is carried out according to the different characteristics of students, and finally the method of "psychological suggestion" is used to help students build confidence.

**Subjects and methods:** 400 patients with anxiety disorder with different degrees of psychological anxiety were selected as the research object. The students in the control group adopted the conventional teaching scheme, and the three groups of modern dance group, folk dance group and classical dance group adopted the corresponding teaching scheme combined with psychology, which lasted for 6 months. After the experiment, the mental health status of patients was analyzed by Hamilton Anxiety Rating Scale (HAMA). The patient's anxiety level is evaluated and analyzed by decision tree algorithm 5.

**Results:** In the seven dimensions of mental factors, the anxiety symptoms of patients in modern dance group, folk dance group and classical dance group were significantly improved, while the anxiety symptoms of the control group were only improved to a certain extent. Therefore, the introduction of dance education has an obvious effect on patients.

**Conclusions:** Dance education combined with mental health has an ideal effect on the emotional relief of patients with anxiety disorder, especially modern dance and folk dance. The follow-up study can apply the proposed dance education to the intervention of patients with clinical anxiety disorder, so as to realize the management of psychological problems.

**Key words:** dance education - anxiety disorder - improve - emotion

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## INTRODUCTION

Anxiety will directly affect people's enthusiasm for life and the state of daily life. If people are in a state of anxiety for a long time, it will lead to negative emotional reactions. The international psychological association pointed out that the proportion of anxiety and depression increased by about 30% worldwide, of which the proportion of female patients was as high as 65% (Tuijl et al. 2018). Compared with the elderly group, young people have a higher proportion of anxiety and depression, which gradually decreases with age (Yoo & Jang 2019). The early symptoms of anxiety patients are not particularly obvious, so it is easy to ignore in clinical practice. When the disease progresses to a certain extent, the patients' life, work and study will be significantly affected (Karen et al. 2021). Dance education combined with mental health education can reduce the bad mood of patients with anxiety disorder, and then promote the healthy development of patients' body and mind.

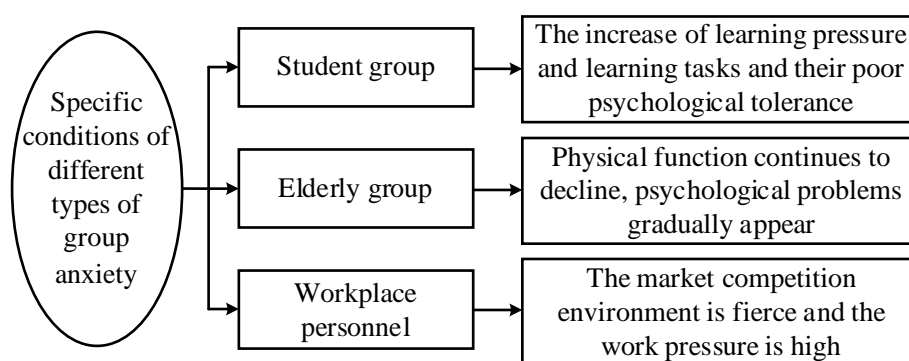
Katie scholars believe that through the extended communication on the Internet, many users have formed relationships with others online. The interaction of several aspects of Internet media makes the development process of online relations different from offline development. In terms of psychological research, the Internet is still a rather unknown field, especially in the field of online relationship development (Katie 2018).

Newby and other researchers analyzed the effects of cognitive behavioral therapy combined with the internet and mental health education on disease anxiety disorder and somatic symptom disorder (Newby et al. 2018). On the basis of analyzing autism, early psychosis and social anxiety disorder, Pepper and other researchers elaborated the role of social cognition and its relationship with young disabled people with social disorder (Pepper et al. 2018). A large number of studies at home and abroad have confirmed that dance education, as a way to alleviate patients' anxiety, has attracted the attention of many experts.

Anxiety disorder is a very complex psychological and emotional disorder. Its clinical manifestations are usually motor agitation and sympathetic hyperactivity. The causes of the disease are depression, mental stimulation, personality, congenital heredity, etc., which are manifested in negative emotions such as anxiety, shame, disappointment, anxiety, fear and so on (Da et al. 2020). Anxiety, as an abnormal psychological emotion of human beings, is mainly manifested in anxiety, panic, tension, anxiety and other psychological manifestations. Psychologists believe that anxiety usually refers to that people's adverse feelings such as risk, pressure and pain exceed their acceptable range, and it is difficult for people to face and solve these problems (Siew et al. 2019). Generally speaking, anxiety itself is a very reasonable emotional response. However, long-term anxiety will lead to physiological and emotional diseases.

According to different types, anxiety can be divided into pathological anxiety and realistic anxiety. Pathological anxiety is one of the most common types of anxiety. Its clinical manifestations are panic anxiety, generalized anxiety disorder and so on (Ashar et al. 2021). At present, the main causes of anxiety are the pressure from life, communication, learning and other aspects, the requirement of perfection, the worry about health, the inseparability of smart phones and so on. At present, the most common intervention measures for anxiety disorders are personalized psychological intervention, lectures on professional knowledge of mental health and so on (Rankin et al. 2018). These intervention methods can reduce the psychological anxiety of patients to a certain extent, but the application scope of these

intervention methods is greatly constrained, and the implementation is difficult, the effect is poor, and the real-time performance is low (Mennin et al. 2018). Therefore, they have little value in clinical promotion. In order to alleviate the bad psychological emotions of patients with anxiety disorder, scholars at home and abroad have proposed a variety of auxiliary treatment methods such as music, dance, vision, space and education, which have been proved to have obvious effects (Karayagiz et al. 2020). As a two-way educational behavior, dance education requires teachers and students to complete dance movements together. The contents involved include students' own acceptance ability, students' psychological quality and teaching content.



**Figure 1.** Specific conditions of different types of group anxiety

Students, workers, the elderly and other different types of groups will have varying degrees of anxiety, but the causes of anxiety are different (Da et al. 2020; Siew et al. 2019; Ashar 2021). After entering the university, college students are facing great changes in learning styles. At the same time, with the increase of learning pressure and learning tasks and their poor psychological tolerance, their mental health problems are becoming increasingly prominent. A large number of studies at home and abroad show that there is a great correlation among students' emotional intelligence, psychological anxiety and learning adaptability. With the growth of age, the physical function of the elderly continues to decline, the disease resistance also gradually weakens, and the lack of activity leads to the gradual increase of psychological problems such as loneliness, depression, loss and paranoia, which further affects the physical health of the elderly. At present, the professional level of enterprise staff is very limited and the market competition environment is becoming increasingly fierce. Their risk control ability is very low, and the staff will face great work pressure, which will lead to their psychological problems. Figure 1 shows the specific situation of different types of group anxiety.

At present, there are relatively few studies on the impact of dance education on anxiety disorder at home and abroad, and the research results are controversial in the medical field. The study takes anxiety patients as the research object, and analyzes the alleviating effect of dance education on the bad mood of anxiety patients, in

order to provide new research ideas for the intervention and prevention of clinical anxiety patients.

## SUBJECTS AND METHODS

### Study setting

According to the function and purpose of dance, dance can be divided into life dance and art dance. Life dance is a dance activity that people carry out for their own life needs. Art dance is a dance for the audience to enjoy. Life dance includes: custom dance, religious sacrifice dance, social dance, self-entertainment dance, sports dance, educational dance, etc. Custom dance, also known as festival and ritual dance, is a variety of mass dance activities held by many nationalities in marriage, funeral, planting, harvest and other festive festivals. In these dance activities, the customs, social features, cultural traditions and national characteristics of all nationalities are shown. According to different styles, dance education can be divided into folk dance, classical dance, modern dance and newly created dance. Chinese national dance is a form of artistic expression that shows regional and national characteristics. It can not only convey positive and optimistic emotional experience to people, but also help them relax their mood and devote themselves to the edification of other cultures. As an art course, the corresponding teaching process, form and content of Chinese national dance are diverse and personalized. According to previous research results, Chinese national dance education can improve

depression, irritability, anxiety and other bad emotions to a certain extent. The reason is that Chinese national dance education can expand students' cognitive ability, improve their views on anxiety, help them experience different emotions, and then enable them to focus their attention and prevent the adverse effects of anxiety. On the basis of national and folk dance, classical dance has been refined, sorted, processed and created by professional workers in previous dynasties, and passed down through the test of long-term artistic practice. It is considered to be a dance with the characteristics of classical style with typical significance. Many countries and nations in the world have dances with certain exemplary significance and classical style characteristics. Many countries and nationalities in the world have their

own unique styles of classical dance. Classical dance in Europe generally refers to ballet. Modern dance is a dance genre that rose in Europe and America at the end of the 19th century and the beginning of the 20th century. Its main aesthetic view is to oppose the formalism tendency of classical ballet at that time, which was conservative, divorced from real life and simply pursuing skills. It advocates to get rid of the bondage of the rigid movement program of classical ballet, freely express people's real feelings with dance movements in line with the natural movement rules, and emphasizes that dance art should reflect modern social life. The difficulties faced in the process of dance teaching and the strategies of dance education combined with psychology are shown in Table 1.

**Table 1.** Difficulties in the process of dance teaching and Strategies of dance education combined with psychology

Difficult problem	Type	Strategy	Type
Difficult problem 1	Limited teaching resources	Strategy 1	Teaching through multi-sensory channels
Difficult problem 2	Single teaching method	Strategy 2	Carry out different teaching according to the different characteristics of students
Difficult problem 3	Lack of talent training plan	Strategy 3	Help students build confidence through "psychological suggestion"

Newly created dance is different from the above three styles of dance. It is often based on the performance content and the needs of shaping characters, not stick to one style, learn from and absorb various styles, dance expression means and expression methods of various dance genres, and incorporate them for my own use, so as to create a dance with a unique new style different from the formed various dance styles.

In the process of dance teaching, there are very big problems, which are embodied in that teachers do not pay attention to dance practice in the professional teaching process, the teaching resources prepared by teachers are limited, it is difficult to bring diversified learning contents to students, the teaching method of teachers in the teaching process is single, and there is no professional talent training plan. In terms of teaching resources, teachers cannot help students' in-depth experience. In dance practice, students lack the perfection of practice. Stage practice plays a very important role in music education in colleges and universities. Students' technical skills can be effectively improved, and teachers can find problems in time in the teaching process. Dance practice can give students the opportunity to show themselves and test themselves in stage practice. Stage practice is the key point in teaching. It can not only exercise students' performance ability, but also improve students' good attitude. Dance education combined with psychology is mainly reflected in the following three aspects. First, teaching through multi-sensory channels. Teachers can integrate tactile, auditory, visual and other senses into dance teaching, which can not only improve students' concentration through novel forms of stimulation, but also promote the memory of dance movements. Good education includes teachers teaching the content of dance movements, demonstrating movements, making students feel the

state of muscles in the formation stage of movements, and comparing movements through different movements. Second, different teaching should be carried out according to the different characteristics of students. Teachers should teach according to students' different personality characteristics, including physique, temperament, personality, values, attitude, interest, motivation, emotion, needs, ability, etc. The third is to help students through "psychological suggestion". "Psychological suggestion" refers to the change of students' attitude, concept, emotion and desire when accepting others or the outside world. A large number of studies have confirmed that "psychological suggestion" can enhance students' interest in learning and ensure students' self-confidence and freedom in the process of dance learning to a great extent.

## Design

In order to analyze the improvement effect of dance education on the mood of patients with anxiety disorder, the Einfo data statistical analysis software was used to analyze the improvement effect of dance education on the mood of patients with anxiety disorder. The mental health status of patients was analyzed by Hamilton Anxiety Rating Scale (HAMA). The patient's anxiety level is evaluated and analyzed by decision tree algorithm 5. 400 patients with anxiety disorder with different degrees of psychological anxiety were selected as the research object. According to the digital random grouping method, they were divided into control group, modern dance group, folk dance group and classical dance group. The students in the control group adopted the conventional teaching scheme, and the three groups of modern dance group, folk dance group and classical dance group adopted the corresponding teaching scheme

combined with psychology. The cycle lasted for 6 months, and the number of people in each group was 100. The basic information of the research object is shown in Table 2. HAMA is divided into mental and physical factors, with a total of 14 items. Each item is scored by 5-level scoring method, and the total score is 60 points. Somatic anxiety factors include autonomic nervous system symptoms, reproductive and urinary system symptoms, gastrointestinal symptoms, respiratory system symptoms, cardiovascular system symptoms, sensory system and muscle system symptoms. Mental anxiety factors include behavioral performance,

depressive mood, cognitive function, insomnia, fear, tension and anxiety. The higher the score of the scale, the more serious the anxiety of patients. The anxiety level is divided into four levels: no anxiety, possible anxiety, obvious anxiety and serious anxiety, and the corresponding score values are respectively. The improvement rate is the proportion of the number of people without anxiety and possible anxiety and the total number of people. In order to ensure the reliability of the research results, the average anxiety of all personnel in each group was taken as the final result.

**Table 2.** Basic information of research objects

Attribute	Control group	Modern dance group	Folk dance group	Classical dance group
Male	46	45	47	48
Female	54	55	53	52
Age/year	36.32±11.96	37.58±11.68	367.56±10.88	37.52±10.62
Course of disease/days	54.56±14.96	52.56±12.65	52.06±13.21	51.68±11.99

The questionnaires used in the study were calculated by reliability and validity formula. The reliability of the questionnaire is tested by split half reliability, which is obtained by the calculation formula of Pearson correlation coefficient  $r$ , as shown in formula (1).

$$r_{hh} = \frac{\sum_{j=1}^m (x_j - \bar{x})(y_j - \bar{y})}{\sqrt{\sum_{j=1}^m (x_j - \bar{x})^2} \sqrt{\sum_{j=1}^m (y_j - \bar{y})^2}} \quad (1)$$

In formula (1),  $x_j$  and  $y_j$  represent odd and even variables,  $\bar{x}$  and  $\bar{y}$  represent the corresponding average values of the corresponding two variables,  $m$  refers to the number of samples, and  $r_{hh}$  refers to the split half reliability. Pearson correlation coefficient can also be called Pearson product moment correlation coefficient. When  $P < 0.05$ , the gap has significant statistical difference, and  $P < 0.01$ , the gap has very significant statistical difference. When the correlation coefficient is 0, the vectors  $x$  and  $y$  are not correlated. When the value of  $x$  increases (decreases) and the value of  $y$  decreases (increases), the vectors  $x$  and  $y$  are negatively correlated, and the correlation coefficient is between -1.0 and 0.0. When the value of  $x$  increases (decreases), the value of  $y$  increases (decreases), the two vectors of  $x$  and  $y$  are positively correlated, and the correlation coefficient is between 0.0 and +1.0. The value range of correlation coefficient is set as follows, 0.8-1.0 refers to very strong correlation. 0.6-0.8 refers to strong correlation. 0.4-0.6 indicates medium intensity correlation. 0.2-0.4 indicates weak correlation. 0.0-0.2 indicates very weak correlation and un-correlation. Pearson correlation coefficient is the upgrade of Euclidean distance, that is, it provides different processing steps for the value range of

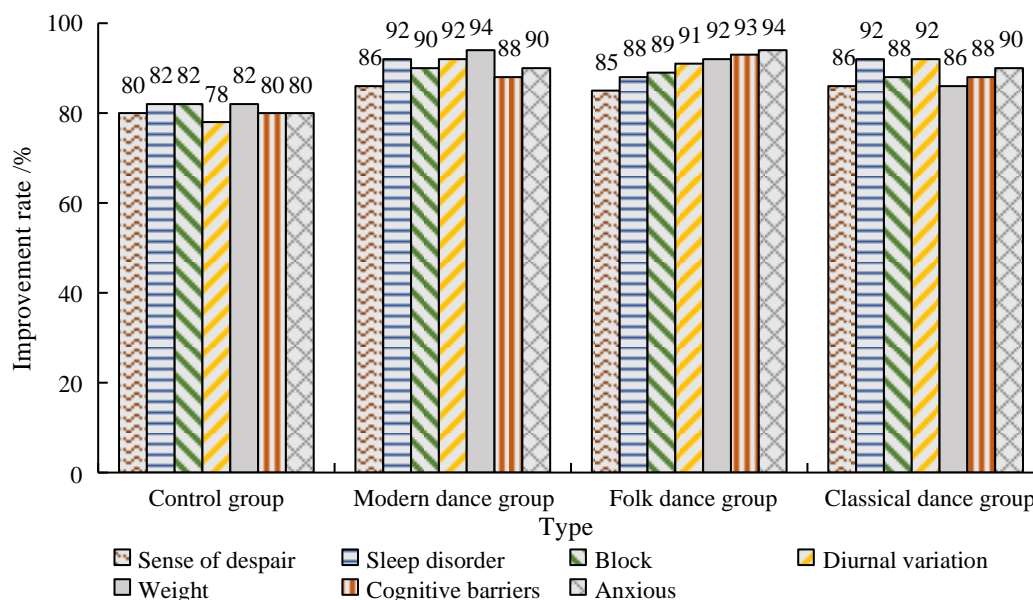
variables, and the differences in the dimensions of different variables are removed in the calculation process. It is also an improvement of cosine similarity in the case of missing dimension value.

## RESULTS

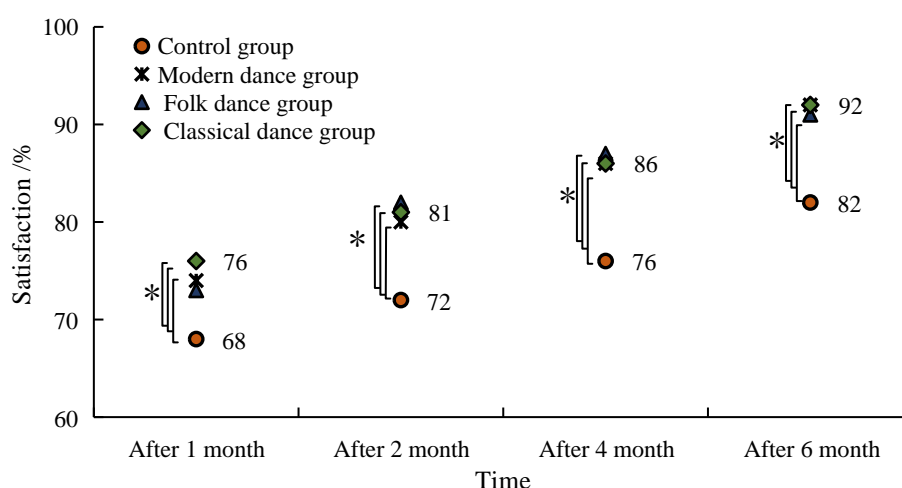
The questionnaires used in the study were tested by the reliability and validity calculation formula, and the reliability and validity were 0.74 and 0.76 respectively. Figure 2 shows the improvement of four groups of anxiety patients after the experiment. In the seven dimensions of mental factors, the anxiety symptoms of patients in modern dance group, folk dance group and classical dance group were significantly improved, while the anxiety symptoms of the control group were only improved to a certain extent. The improvement rates of anxiety symptoms in modern dance group, folk dance group and classical dance group were 86.0-88.0%, 85.0-93.0% and 86.0%-92.0% respectively. Therefore, the introduction of dance education to intervene the bad emotions of patients with anxiety disorder has an obvious effect. According to the seven dimensions of behavior performance, depression, cognitive function, insomnia, fear, tension and anxiety during the meeting, the adverse emotions of anxiety patients in the modern dance group can be greatly improved, and the corresponding improvement rates are 86%, 92%, 90%, 92%, 94%, 88% and 90% respectively. The corresponding improvement rates of anxiety patients in folk dance group were 85%, 88%, 89%, 91%, 92%, 93% and 94% respectively. The corresponding improvement rates of anxiety patients in classical dance group were 86%, 92%, 88%, 92%, 86%, 88% and 90% respectively. Therefore, the introduction of dance education to intervene the bad emotions of patients with anxiety disorder has an obvious effect.

Figure 3 shows the improvement of anxiety in four groups of anxiety patients in this experimental cycle. It can be seen from Figure 3 that the improvement rate of the four groups of patients increased with the increase of experimental time. However, the improvement rate of anxiety symptoms in modern dance group, folk dance group and classical dance group was more significant, which was statistically significant compared with the control group. This further shows that different types of

dance education can improve the secondary anxiety symptoms of patients with anxiety disorder. With the increase of dance education time, the anxiety of patients with anxiety disorder can be relieved to a great extent. This is mainly because their bad emotions such as irritability and depression can be well released after gradually adapting to the relief of dance education on human physical and psychological emotions.



**Figure 2.** The Improvement of depressive symptoms in the two groups after the experiment



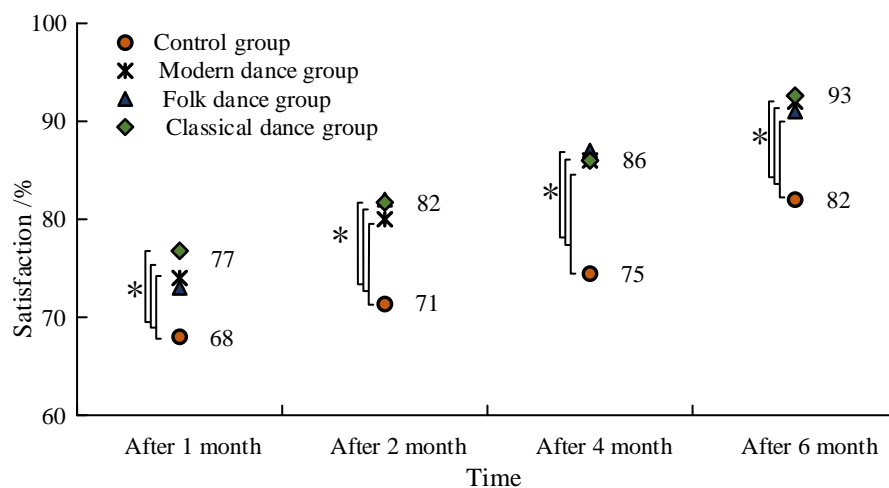
**Figure 3.** The improvement of anxiety in four groups of anxiety patients in this experimental cycle  
 Note: \* means statistically significant compared with the control group.

Figure 4 shows the improvement of depressive mood in four groups of anxiety patients in this experimental cycle. It can be seen from Figure 4 that the improvement rate of depression in the four groups increased with the increase of experimental time. However, the improvement rate of depressive symptoms in modern dance group, folk dance group and classical dance group was more significant, which was statistically significant compared with the control group. This further shows that

different types of dance education can improve the depressive symptoms of patients with anxiety disorder. With the increase of dance education time, the depression of patients with anxiety disorder can be relieved to a great extent, which is mainly because their depression and other bad emotions can be well released after gradually adapting to the relief of dance education on human physical and psychological emotions. Teachers take corresponding measures and methods to

reduce students' anxiety in the teaching process. First, create a good and relaxed classroom environment, quickly improve the ability of communication and expression, and reduce the anxiety of students themselves. Second, in classroom teaching, we should pay more attention to cultivating students' ability to actively answer questions, and encourage and praise students who are introverted and lack of confidence. Teachers take corresponding measures and methods to

reduce students' anxiety in the teaching process. First, create a good and relaxed classroom environment, quickly improve the ability of communication and expression, and reduce the anxiety of students themselves. Second, in classroom teaching, we should pay more attention to cultivating students' ability to actively answer questions, and encourage and praise students who are introverted and lack of confidence.



**Figure 4.** The improvement of depressive mood in four groups of anxiety patients in this experimental cycle  
 Note: \* means statistically significant compared with the control group.

## CONCLUSIONS

The intervention role of dance education in mental diseases has attracted the attention of relevant experts. The study set up four groups: modern dance group, folk dance group, classical dance group and control group to analyze the alleviating effect of dance education on patients with anxiety disorder. The results show that the anxiety symptoms of patients in modern dance group, folk dance group and classical dance group have been significantly improved, while the anxiety symptoms of the control group have only been improved to a certain extent. The improvement rates of seven mental factors in modern dance group, folk dance group and classical dance group were 86.0-88.0%, 85.0-93.0% and 86.0%-92.0% respectively. Dance education combined with mental health has an ideal effect on the emotional relief of patients with anxiety disorder, especially in modern dance and folk dance. Follow up research can apply dance education to the intervention and prevention of patients with clinical anxiety disorder.

**Acknowledgements:** None.

**Conflict of interest:** None to declare.

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# STUDY ON THE EFFECT OF POSITIVE PSYCHOLOGICAL EDUCATION ON WOMEN'S DEPRESSION DURING PREGNANCY

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## SUMMARY

**Background:** The self-thinking of patients with depression is easily affected by the external natural environment and human factors. Positive psychology was put forward by American psychologists at the end of the 20th century. Positive psychology is mainly to diagnose and study people's psychological problems, tap personal positive personality characteristics and potential, personality charm and interests, which is more conducive to human beings to establish good personal interpersonal relations and contribute to the healthy and harmonious development of marriage and family, friendship and religious emotion.

**Research objects and methods:** 200 female patients with depression during pregnancy were randomly divided into control group and experimental group, with 100 in each group. The control group was intervened with general psychological methods, while the experimental group was intervened with positive psychological education. The experimental cycle was 6 months. After that, the depressive symptoms of the two groups were measured by Hamilton Depression Scale (HAMD), and the improvement effect was classified by random forest algorithm. The HAMD scale includes seven factors: despair, sleep disorder, block, day and night change, weight, cognitive disorder and anxiety. Set the evaluation index of improvement effect as no improvement, improvement and obvious improvement. The improvement rate is the ratio of the number of people and the total number of people at the two levels of improvement and obvious improvement.

**Results:** The depressive symptoms of patients in the control group were improved to some extent, while the depressive symptoms of patients in the experimental group were improved more significantly. Therefore, the introduction of psychological education into the experimental group has an obvious positive effect on patients.

**Conclusions:** People from all walks of life should pay special attention to the serious impact of depression on people's normal life. The study used positive psychology education for intervention treatment.

**Key words:** positive psychology - education pregnancy - depressed

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## INTRODUCTION

The domestic epidemiological survey of mental diseases shows that the lifetime prevalence of depression is about 10%, of which 75% of patients are at risk of recurrence (Kingi et al. 2018). Patients with depression will reduce their self-identity and deny their self-worth, show very negative emotions, and seriously affect their quality of life due to the long-term impact of negative emotions (Sethna et al. 2021). Female depression during pregnancy is the symptoms of fatigue, poor sleep, irritability, anxiety, inattention and so on, which will lead to the healthy growth of the fetus and affect the health of pregnant women (Reuveni et al. 2021). Studies have confirmed that positive psychology education will improve the bad mood of patients with depression and improve their quality of life.

Robinson R and other scholars clarified the effect of maternal pregnancy depression on fetal mental disorders through experiments, and believed that maternal prenatal depression was related to children's neuropsychiatric diseases. Future research should clarify the biological basis and timely intervene in the early stage of pregnancy to prevent neuropsychiatric damage in offspring (Robinson et al. 2019). Muoz researchers believe that solving pregnant women and new mothers before they have mental disorders is a method that can be promoted online, which will contribute to the overall health of the population (Muoz 2019). In view of the

unclear relationship between the use of antidepressants during pregnancy and adverse perinatal outcomes, Kamala and other scholars set up experiments to analyze the risk of the use of antidepressants during pregnancy on adverse perinatal outcomes. Both depression and antidepressant use were independently associated with the risk of adverse perinatal outcomes; however, the risk associated with antidepressants was higher over and above the risk associated with depression. This may reflect the biological effects of antidepressants, greater severity of depression in those treated, or both (Kamala et al. 2020). The causes of depression during pregnancy are interpersonal relationship, personal and family depression history, hormone level changes and so on (Kamala et al. 2018). During the first trimester of pregnancy and childbirth, there will be significant changes in hormones in pregnant women, which will affect the neurotransmitters of the brain regulating emotion; Personal and family history of depression can lead to pregnancy depression; In terms of interpersonal relationship, it is easy to encounter problems such as being not recognized and understood, as well as problems that cannot be solved through their own efforts, which will lead to depression (Akbarian et al. 2018). In addition, there are various negative emotions caused by work pressure, frustration in life and worrying about the fetus. At present, the incidence rate of female depression during pregnancy is on the rise, and it is most likely to occur in the second and third trimester of pregnancy. At