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.

Conclusion: 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
present, the incidence rate of depression in China is about 25.0% (Kulkarni et al. 2019). Research shows that about 15% of women will suffer from perinatal depression, and the high incidence of the disease is pregnant women who have a history of depression, a history of psychosis and are not good at adjusting their mentality. According to the severity of the disease, depression can be divided into mild depression, moderate depression and severe depression. Mild depression has mild symptoms, such as depression, unhappiness, mild sleep disorder, loss of appetite and physical discomfort (Kautz et al. 2021). Moderate depression is more serious, which is characterized by obvious depression, showing a negative and pessimistic state, frowning all day, laziness and procrastination, low efficiency, lack of interest in previous favorite things, obvious sleep disorders and loss of appetite (Breivik et al. 2021). Moderate depression is more serious, which is characterized by obvious depression, showing a negative and pessimistic state, frowning all day, laziness and procrastination, low efficiency, lack of interest in previous favorite things, obvious sleep disorders and loss of appetite (Zhang et al. 2021). Severe depression symptoms are more serious, irritable, sensitive, feel that life is worse than death, and have no hope for future life. For a long time, there are various sleep disorders and loss of appetite, such as difficulty in falling asleep, shallow sleep, early awakening, etc., so they can’t live a normal life, and even have the tendency of self-abandonment, self-injury and suicide. After the occurrence of depression during pregnancy, positive treatment should be taken. The common clinical treatment measures are active treatment, active communication with others and relaxation (Breivik et al. 2021; Zhang et al. 2021). When depression occurs for a long-time during pregnancy, you need to take antidepressants that have no side effects on yourself and the fetus under the guidance of a doctor. For interpersonal problems, pregnant women need to stay with their spouses for a long time every day, and actively tell their troubles to their friends and relatives. For psychological problems, pregnant women can do things that make them happy during pregnancy, try to have a happy mood, ensure adequate sleep, do more exercise, pay attention to nutrition, and ensure mental stability through yoga classes during pregnancy. Figure 1 shows the causes and treatment measures of women’s depression during pregnancy.

**Figure 1.** Causes and treatment measures of female depression during pregnancy

At present, there are relatively few studies on the impact of positive psychology education on depression during pregnancy at home and abroad, and the research results are controversial in the medical field. The study takes women’s depression during pregnancy as the research object to analyze the impact of positive psychological education on women’s depression during pregnancy, in order to improve women’s depression during pregnancy and improve women’s quality of life during pregnancy.

**SUBJECTS AND METHODS**

**Study setting**

There are three kinds of problems in the research of positive psychology: positive subjective experience, positive personal characteristics and positive environmental institutions. Positive subjective experience includes happiness, love, achievement, gratitude, happiness, etc. Positive personal traits involve self-realization, value, interest, strength, personality, talent, etc. Positive environmental institutions involve the whole society, community, school, family, etc. (Katz et al. 2018). Positive psychology uses scientific methods to analyze the power of human positive psychology, positive behavior and positive cognitive habits (Farid et al. 2018). Positive mental state is a kind of energetic state, including prosocial behavior, investment experience, positive emotion, good interpersonal relationship and the pursuit of the and significance value of life (Garcés et al. 2018). Active mental health education absorbs the essence of ancient and modern thoughts at home and abroad, focuses on the pathological key of traditional mental health education, faces all, takes active prevention and development as the
orientation, purposefully and systematically cultivates the positive mentality of teachers and students and the whole people, and lays a foundation for a happy and successful life (Kerri et al. 2018). Positive mental health education adheres to the positive evaluation orientation of human nature, pays attention to the development of people’s own positive factors and potential, takes people’s inherent, actual, potential and constructive strength, virtue and goodness as the starting point, and interprets people’s psychological phenomena (including psychological problems) with a positive attitude, so as to stimulate people’s own internal positive quality, so that everyone can learn to create happiness and share happiness, maintain the best state of life, so as to improve psychological immunity and resistance; Create a heart filled with positive spirit, optimism, hope and spring vitality(Antoine et al.2018). Positive mental health education is to start from “positive”, that is, to discover and interpret various phenomena from a positive perspective, cultivate a positive attitude with positive contents and ways, induce positive emotional experience with positive process, strengthen positive effects with positive feedback, and shape a positive life with a positive attitude (Reuveni et al. 2021). So as to lay a positive psychological foundation for a harmonious society and create a harmonious mental state (Mennin et al. 2018). Positive psychology education can bring meaning and happiness to patients with depression (Ashar et al. 2021). Specifically, positive psychology education is as follows, to help pregnant women establish positive strength, promote the development of human society, make them have resonance, empathy, expression, happiness, perseverance and aesthetics, and help them get higher virtue, goodwill, understanding and spirituality.

Design

In order to analyze the impact of positive psychology education on women’s depression during pregnancy, the study used random forest algorithm to analyze and grade the depression during pregnancy. 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. The depressive symptoms of the two groups were measured by Hamilton Depression Scale (HAMD). The HAMD scale includes seven factors: despair, sleep disorder, block, day and night change, weight, cognitive disorder and anxiety. The sense of despair consists of the sense of decreased ability, the sense of despair and the sense of inferiority. In this way, the actual characteristics of patients can be reflected more simply and clearly. Sleep disorder consists of early awakening, lack of deep sleep and sleepiness. Block consists of depression, work and interest, block and sexual symptoms. The reliability and validity of HAMD were above 0.88-0.99 and 0.84, respectively. Day night variation is a term of day night variation. Cognitive impairment involves self-guilt, suicide, agitation, depersonalization and reality disintegration, paranoid symptoms and obsessive-compulsive symptoms. Weight loss is weight loss. Anxiety involves mental anxiety, somatic anxiety, gastrointestinal symptoms, hypochondriasis and insight. Factor analysis can not only reflect the psychopathological characteristics of patients, but also reflect the clinical results of target symptom groups. The HAMD evaluation method is simple and the standard is clear. It is easy to master and can be used to evaluate the depressive symptoms of depression, manic depression, neurosis and other diseases, especially for depression. However, this scale cannot distinguish depression from anxiety disorder, because the total scores of both have a similar increase. 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. In order to ensure the reliability of the research results, the average value of all objects is taken as the final research results. Table 1 refers to the basic information of the research object.

Table 1. Refers to the basic information of the research object

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Control group</th>
<th>Experience group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>45</td>
<td>46</td>
</tr>
<tr>
<td>Female</td>
<td>55</td>
<td>54</td>
</tr>
<tr>
<td>Age/year</td>
<td>36.02±11.56</td>
<td>37.58±10.38</td>
</tr>
<tr>
<td>Freshman</td>
<td>21</td>
<td>23</td>
</tr>
<tr>
<td>Sophomore</td>
<td>26</td>
<td>22</td>
</tr>
<tr>
<td>Junior</td>
<td>28</td>
<td>26</td>
</tr>
<tr>
<td>Senior</td>
<td>25</td>
<td>29</td>
</tr>
</tbody>
</table>

Random forest algorithm is a classical bagging integration algorithm. Its core idea is to build a variety of decision trees and form the forest structure between decision trees. The characteristics and advantages of random forest algorithm are as follows. First, for many kinds of data, it can produce high accuracy classifiers. Second, it can handle a large number of input variables. Third, it can evaluate the importance of variables when determining categories. Fourth, when building a forest, it can produce an unbiased estimation of the generalized
error internally. Fifthly, it contains a good method to estimate the lost data, and if a large part of the data is lost, the accuracy can still be maintained. Sixth, it provides an experimental method to detect variable interactions. Seventh, for unbalanced classification data sets, it can balance errors. Eighth, it calculates the closeness in each case, which is very useful for data mining, detecting outliers and visualizing data. Ninth, use the above. It can be extended to unlabeled data, which usually use unsupervised clustering. It can also detect deviators and view data. Tenth, the learning process is very fast. The basic algorithm model is decision tree. In the decision-making process, the accuracy of the algorithm is increased by voting on the number of decisions. In the running stage, the algorithm introduces the process of random selection. The specific steps are as follows: set the current attribute set as a basic point set (including m attribute) in the operation process, and select the optimal attribute from the set as the division criterion. In the operation stage, the sampling method with return is used to process the basic data source, and finally different sample sets are obtained. In the last stage, k attributes are randomly selected from the attributes to be selected as the candidate attributes of the decision node, and then the division attributes of the sample are obtained. The decision tree construction process is obtained by training each sample set. The random forest algorithm votes and combines different decision trees, and takes the classification attribute with the most votes as the result of the random forest algorithm. The calculation formula of classification result $f(x)$ of random forest algorithm is formula (1).

$$f(x) = \arg\max_{i=1,2,...,c} \{I(f_{\text{perc}}(x) = i)\} \quad (1)$$

In formula (1), the test sample is represented by $x$, the number of random forests is represented by $c$, each category in the number of random forests is represented by $I(\cdot)$, and the number of equations in brackets is $I(\cdot)$.

The variation formula of iterative particle position and velocity vector is equation (2).

$$\begin{align*}
    v^{i+1} &= w \times v^i + c_1 \cdot \text{rand}() \cdot (pbest_i - x_i) + c_2 \cdot \text{rand}() \cdot (gbest - x_i) \\
    x^{i+1} &= x^i + v^{i+1}
\end{align*} \quad (2)$$

$x = 2\left[2 - \varphi - \sqrt{\varphi^2 - 4 \cdot \varphi}\right]$, $\varphi = c_1 + c_2 > 4$, Usually set to 4.1. The inertia weight is expressed in $w$, which $v^i$ represents the flight speed vector of the particle $i$ in the second iteration $i$, $v^{i+1}$ represents the update speed of the particle $i$, rand() represents the random number evenly distributed between 0–1, $x^i$ represents the position vector in the second iteration $k$, and $x^{i+1}$ represents the position update, $pbest_i$ represents the individual extreme value of the particle, $gbest$ represents the global extreme value of the group, and $c$ is the weight factor. The calculation formula of fitness function is equation (3).

$$\text{fitness} = \frac{1}{G} \sum_{y_{g=1,2,...,G}} \left(\arg\max_{y_{i=1,2,...,c}} \{I(f_{\text{perc}}(x) = i)\} - y_g\right)^2 \quad (3)$$

**RESULTS**

Figure 2 shows the improvement of depression during pregnancy of women in the two groups after 6 months of positive psychology education. In the seven dimensions of mental factors, the symptoms of depression during pregnancy in the experimental group were significantly improved, while those in the control group were only improved to some extent. The improvement rates of despair, sleep disorder, block, day and night change, weight, cognitive impairment and anxiety in the experimental group were 89.0%, 89.0%, 90.0%, 91.0%, 92.0%, 93.0% and 92.0% respectively. The improvement rates of corresponding mental dimensions in the control group were 82.0%, 83.0%, 82.0%, 85.0%, 84.0%, 84.0% and 86.0% respectively.
Women’s depression during pregnancy has obvious effect through positive psychological education.

Table 2 shows the improvement of depression during pregnancy in the experimental group. It can be seen from table 3 that the improvement rate of depression during pregnancy in the experimental group increased with the increase of experimental time. Compared with before the positive psychological education intervention, the improvement rate after 1 month, 3 months and 6 months was higher. After one month of positive psychological intervention, the improvement rates of despair, sleep disorder, block, day and night change, weight, cognitive disorder and anxiety were 77.0%, 78.0%, 79.0%, 82.0%, 83.0%, 84.0% and 84.0% respectively. After 3 months of positive psychological intervention, the improvement rates of despair, sleep disorder, block, day and night change, weight, cognitive impairment and anxiety were 82.0%, 83.0%, 86.0%, 85.0%, 88.0%, 89.0% and 86.0% respectively. This further shows that positive psychological education can improve women’s depressive symptoms during pregnancy, and with the increase of positive psychological education time, this improvement effect is more effective and significant.

Table 3 shows the improvement of depression during pregnancy in the control group. It can be seen from table 4 that the improvement rate of depression during pregnancy in the control group increased with the increase of experimental time. Compared with before the general psychological education intervention, the improvement rate after 1 month, 3 months and 6 months of intervention was improved. After one month of positive psychological intervention, the improvement rates of despair, sleep disorder, block, day and night change, weight, cognitive disorder and anxiety were 76.0%, 77.0%, 78.0%, 77.0%, 78.0%, 78.0% and 79.0% respectively. After 3 months of positive psychological intervention, the improvement rates of despair, sleep disorder, block, day and night change, weight, cognitive disorder and anxiety were 79.0%, 81.0%, 80.0%, 83.0%, 82.0%, 82.0% and 84.0% respectively. This shows that general psychological education can improve women’s depressive symptoms during pregnancy, and the
improvement effect is slightly improved with the increase of general psychological education time.

### Table 3. The improvement of depression during pregnancy in the control group

<table>
<thead>
<tr>
<th>Index</th>
<th>Before</th>
<th>After 1 month</th>
<th>After 3 months</th>
<th>After 6 months</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sense of despair</td>
<td>72</td>
<td>76</td>
<td>79</td>
<td>82.0</td>
</tr>
<tr>
<td>Sleep disorder</td>
<td>75</td>
<td>77</td>
<td>81</td>
<td>83.0</td>
</tr>
<tr>
<td>Block</td>
<td>76</td>
<td>78</td>
<td>80</td>
<td>82.0</td>
</tr>
<tr>
<td>Diurnal variation</td>
<td>75</td>
<td>77</td>
<td>83</td>
<td>85.0</td>
</tr>
<tr>
<td>Weight</td>
<td>76</td>
<td>78</td>
<td>82</td>
<td>84.0</td>
</tr>
<tr>
<td>Cognitive barriers</td>
<td>78</td>
<td>78</td>
<td>82</td>
<td>84.0</td>
</tr>
<tr>
<td>Anxious</td>
<td>75</td>
<td>79</td>
<td>84</td>
<td>86.0</td>
</tr>
</tbody>
</table>

## CONCLUSIONS

Women’s depression during pregnancy will have adverse effects on the health of pregnant women and fetuses. The study took pregnant women with different degrees of depression as the research object. Based on the analysis of the causes and treatment measures of women’s depression during pregnancy, the random forest algorithm and HAMD scale were used to analyze and grade evaluate the depression during pregnancy. The HAMD scale includes seven factors: despair, sleep disorder, block, day and night change, weight, cognitive disorder and anxiety. The results showed that the improvement rates of despair, sleep disorder, block, day and night change, weight, cognitive disorder and anxiety in the experimental group were 89.0%, 89.0%, 90.0%, 91.0%, 92.0%, 93.0% and 92.0% respectively. The improvement rates of corresponding mental dimensions in the control group were 82.0%, 83.0%, 82.0%, 85.0%, 84.0%, 84.0% and 86.0% respectively. With the increase of experimental time, the improvement rate of depression during pregnancy in the experimental group increased. Compared with before the positive psychological education intervention, the improvement rate after 1 month, 3 months and 6 months was higher. Positive psychological education can improve the depressive symptoms of women during pregnancy, which can be applied in the follow-up to alleviate the depressive mood during pregnancy.

## Acknowledgements

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## Conflict of interest

None to declare.

## Reference

6. Farid C, Kraiss JT, Marion SS, Stevens AWMM, Kapka RW & Bohlmeijer ET: The effect of positive psychology interventions on well-being and distress in clinical samples with psychiatric or somatic disorders: a systematic review and meta-analysis. BMC Psychiatry 2018; 18:211-227
13. King M, Mathoni M, Onesmus G, Ann VS & Manasi K:

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STUDY ON THE EFFECT OF IDEOLOGICAL AND POLITICAL EDUCATION ON ALLEVIATING THE EMOTION OF COLLEGE STUDENTS WITH AFFECTIVE MENTAL DISORDER

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SUMMARY

Background: Students’ self-confidence can reflect their mental outlook, and students’ mental state is closely related to school education curriculum. Ideological and political education in colleges and universities has become an important course that affects students’ learning motivation and enthusiasm. Under the complex background of political and ideological development at home and abroad, more and more colleges and universities gradually began to realize that in addition to actively carrying out the traditional ideological and political theory education, they also need to actively explore, innovate and broaden the carrier of Ideological and political education and promote the new mode of Ideological and political education.

Subjects and methods: 200 college students with affective disorders were selected as the research object. They were divided into control group and experimental group according to the digital random grouping method. The students in the control group used general ideological and political education, while the experimental group used ideological and political education for patients with affective disorders. The experimental time was 6 months. After the experiment, the mood improvement of patients was evaluated by four indexes: depression, anxiety, mania and sleep disorder; and the K-means clustering algorithm was used for grade evaluation. The evaluation grade quantifies the degree of improvement through five grades 1-5. 1 indicates no improvement, 2 indicates slight improvement, 3 indicates improvement, 4 indicates significant improvement and 5 indicates serious improvement.

Results: It can be seen from table 1 that the mood of college students with affective disorders in the experimental group has been significantly improved, mainly because the ideological and political education for patients with affective disorders in the experimental group can timely dredge the affective disorders of college students.

Conclusions: Ideological and political education for patients with affective disorders can timely dredge college students’ affective disorders, improve their psychological problems and enhance their ability to control their emotions.

Key words: affective disorder - colleges and universities - ideological and political education - college student

INTRODUCTION

Affective disorder is a kind of abnormal psychological performance, which has the pathological tendency of self-remission and repeated attack (Zhang et al. 2021). There is no difference between the mental activities of the retarded person and the normal person, and there is no personality defect (Deng 2021). Although it may occur many times, there is no mental decline. The main clinical manifestations are mania and depression (Yu 2021). If two types appear at the same time, it is called mania. College students with affective disorders have received the common attention of educators and social people. How to intervene and prevent college students with affective disorders has become a hot topic. Some experts once advocated the construction of political, ideological and moral education for college students to help students establish good and correct values and outlook on life and alleviate the psychological pressure of college students.

Starting from the ideological and political education in colleges and universities, Wang mainly analyzed the management factors affecting the ideological and political education in colleges and universities from the perspective of social environment and students’ own factors. The results show that the level of ideological and political education in colleges and universities is generally lower than that in Middle Schools, which indicates that the ideological and political education in colleges and universities needs to be strengthened (Wang 2021). Zeng researchers analyzed the application prospect of combining computer big data in the development of Ideological and political education in colleges and universities. The results show that ideological and political education in colleges and universities needs to vigorously promote big data technology (Zeng 2021). He and other researchers believe that nocturnal eating syndrome has been proved to be related to various negative physiological and psychological consequences. By exploring the relationship between neuroticism and nocturnal eating, it is found that, unlike neuroticism, psychological distress is an emotional state, and its plasticity is much greater through appropriate intervention (He 2018). However, at present, there are relatively few studies on the alleviation of college students’ psychological pressure by political, ideological and moral education in China. In view of this, this study analyzes the role of Ideological and political education in higher vocational colleges on students’ mental and emotional pressure through a self-made questionnaire, in order to find a teaching method that can alleviate college students’ mental pressure.

Psychological stress has both positive and negative effects (Robinson 2019). On the one hand, moderate