ANALYSIS OF THE EFFECT OF INTERVENTION ON PERFORMANCE ANXIETY AMONG STUDENTS MAJORING IN VOCAL MUSIC PERFORMANCE

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SUMMARY

Background: Performance anxiety disorder is a social disorder that negatively affects a variety of activities, including musical performance. If a vocal music performance student has this disorder, his future will be greatly negatively affected. Therefore, it is worth studying whether the performance anxiety symptoms of vocal music performance students can be alleviated by psychological intervention.

Subjects and Methods: The study selects students with higher performance anxiety levels, and reduces their anxiety symptoms through psychological intervention based on psychological mechanisms of anxiety and self-emotional regulation. Psychological tests were conducted on the participants before and after the intervention to compare and study the effects of psychological intervention. The psychological test scales included the music performer’s stage anxiety self-rating scale, SCL-90 test and Subjective Satisfaction Scale.

Results: After the psychological intervention, the anxiety scores of the music performers’ Stage Anxiety Self-Rating Scale and SCL-90 test decreased significantly. The score reduction rate of the music performers’ stage anxiety self-rating scale of the participants exceeded 40%, and no aggravation of performance anxiety symptoms was found in the follow-up three months after the intervention.

Conclusions: The experimental results show that psychological intervention has obvious therapeutic effect on performance anxiety of vocal music performance majors, and also has a good effect in preventing recurrence. To sum up, it can be concluded that the psychological intervention on performance anxiety of vocal music performance majors is effective and has the value of popularization and practicality.

Key words: music performance anxiety - mental health - vocal music performance - psychology - psychological intervention

INTRODUCTION

Performance anxiety is a psychological disorder, and people with related symptoms usually have anxiety and adverse reactions of body and mind when facing exams, speeches, sports competitions, art performances and other activities (Kaleńska-Rodzaj 2022). These adverse reactions include physical, psychological, cognitive and behavioral aspects. Physiological symptoms include increased heart rate and breathing, sweating, limb numbness, body chills, increased cortisol secretion, etc. Psychological symptoms include intense tension, anxiety, fear, etc. Cognitive symptoms include inability to concentrate and memory loss, forgetting lyrics and sheet music, etc.; behavioral symptoms include muscle stiffness, tremors, vomiting and diarrhea (Butković et al. 2022). In addition, those with more severe performance anxiety symptoms may develop symptoms several days before the performance or when they are notified of the performance (Pfeifer et al. 2020). Compared with other majors, performance anxiety disorder has a greater negative impact on the career of students majoring in vocal performance, and in fact, studies have found that more than 20% of students majoring in vocal performance have different levels of performance anxiety symptoms. (Sabino et al. 2020). Among students with more severe performance anxiety symptoms, symptoms such as allergic anxiety, depression, sleep disturbance, and severe headaches were also common (Mvu & Eb 2020).

At present, many scholars have conducted research on performance anxiety and related psychological problems. Cornett et al. studied the performance anxiety of music performers and vocal students in Turkey. There is a statistically significant difference in that anxiety symptoms are more common in women than in men, and more than 30% of people with performance anxiety do not know how to manage their anxiety. The study revealed the existence of performance anxiety in vocal practitioners universal (Cornett & Urban 2021). Zy and other researchers took medical students as the research objects to study the effect of simulation teaching and training on students’ anxiety about surgery state. The results of comparative experiments showed that although simulation teaching and training effectively improved students’ technical level, state anxiety did not significantly decrease. (Zy & Sz 2021). Cardozo and his team studied the effect of active learning theory on students’ test anxiety, which is also a common manifestation of performance anxiety. method for the control group (Cardozo et al. 2020). Lusier and his teammates took salespeople as research objects,
explored the anxiety levels of salespeople, demonstrated a negative correlation between salespeople’s anxiety levels and their sales, and explored the impact of personal and social interventions on anxiety levels (Lussier et al. 2021). Based on the Romanian version of the Kenny Music Performance Anxiety Scale, Faur et al. conducted a survey and research on music practitioners in the corresponding regions. The results showed that the theoretical model of the development of the scale was loaded with the actual situation of musicians in the region, and its clinical significance can be further explored (Faur et al. 2021).

Through the above review of the research in the field of anxiety disorders, it can be seen that performance anxiety and related psychological problems are widely valued by relevant scholars. The academic life and career of vocal performance students are greatly affected by performance anxiety, and their emotional management and regulation abilities are usually weaker than that of adult musicians or their teachers. For the above reasons, these students are the targets that need to be focused on when conducting research on performance anxiety disorder and its therapy.

The formation of anxiety psychology can usually be explained by the theory of psychological mechanism, and the feasibility of weakening or even eliminating the influence of psychological mechanism of anxiety through a positive psychological mechanism intervention is worth exploring (Kochenour & Griffith 2020). In the long run, the reduction of performance anxiety disorder has a higher ability to regulate patients’ own emotions. Therefore, to ensure the long-term effect of anxiety disorder intervention, patients need to have corresponding emotional management knowledge (Lindgren et al. 2020). Based on the above reasons, this study designed a psychological mechanism-based intervention method for performance anxiety disorder for vocal performance students, and tested and analyzed the effect of the intervention.

**SUBJECTS AND METHODS**

**Study setting**

The participants of the study were volunteers recruited from a university majoring in vocal performance. After screening, 76 people were selected as participants of the study, and they all signed the informed consent form of the study. The research tools used in this study include the Music Performer’s Stage Anxiety Self-Rating Scale, the Symptom Checklist 90 (SCL-90) and the Subjective Satisfaction Scale. The music performer’s stage anxiety Self-Rating Scale has good reliability and validity, and includes performance anxiety symptoms that students majoring in vocal music may encounter, such as sweating, tremors, accelerated heart rate, insomnia, and forgetting music scores. The table can evaluate anxiety in four aspects: physiology, behavior, cognition, and emotion, and the factors and total scores of each item can achieve statistically significant differences ($P < 0.01$). SCL-90 is one of the most widely used measurement scales in the field of mental health. It is used to measure recent mental health levels. In this study, the anxiety factor of SCL-90 is higher than a certain value as one of the criteria for screening participants. The subjective satisfaction rating scale is a discomfort rating test designed based on the desensitization method. The scale allows participants to summarize the anxiety-provoking situations before and during the stage vocal performance. These assessments were continuously updated throughout the intervention, and participants observed changes in anxiety. The observation results of the reliability coefficient indicate that its $\alpha$ reliability coefficient is 0.81, which is practical. Let $s_j$ represent the intra-item variance of the score, $S_i$ represent the variance of the total score of all items, and $n$ represent the total number of items. The calculation method of the $\alpha$ reliability coefficient is shown in formula (1).

$$\alpha = \frac{n-n\sum s_j^2}{S_i^2 (n-1)}$$

(1)

**Design**

The duration of the intervention experiment was 30 days, of which the first 5 days were the baseline observation period, during which participants were observed and tested to assess their performance anxiety levels prior to the intervention, allowing for comparison of intervention effects. At the beginning of the baseline observation, participants will be interviewed by the researchers to communicate the situations and associated symptoms that make them feel performance anxiety, which will be reflected on a subjective satisfaction scale. During the baseline observation period, participants were asked to record their situation through the stage anxiety self-rating scale and the subjective satisfaction scale each day to assess their overall level of music performance anxiety and their level of anxiety about different issues. Participants were asked to take the SCL-90 test before, during, and after the intervention, and three months after the intervention, to record and compare their anxiety.

The intervention period of this research design is 10 days. The first step of the intervention period is the cognitive adjustment of the participants. The researchers will popularize the knowledge of the causes, influencing factors, psychological mechanisms, intervention methods and principles of anxiety psychology and behavior to the participants. Allow participants to more fully and objectively understand the problems they face, and at the same time have a better understanding and trust in psychological intervention methods. Participants should understand that the formation and reinforcement of psychological mechanisms is the process shown in Figure 1.

The anxiety of the participants is often caused by a certain stimulus situation (S), such as the information of the performance, the lights of the stage and the sight of
the positive psychological mechanism. The negative psychological mechanism, and learn and accept the participants relax completely, avoid the original study uses music relaxation and muscle relaxation to let comfortable psychological mechanism. Clinically, the anxiety-provoking stimulus with a relaxed mood (E) that relieves or avoids anxiety symptoms (R), and is replaced by a more comfortable feeling that allows participants to do something about themselves. Give a more positive evaluation (E), and form a positive and comfortable psychological mechanism. Clinically, the study uses music relaxation and muscle relaxation to let the participants relax completely, avoid the original negative psychological mechanism, and learn and accept the positive psychological mechanism.

Figure 1. The formation of the psychological mechanism

After the positive psychological mechanism is formed, it is necessary to further inform the participants how to identify and control their anxiety, so as to ensure the long-term effect of the intervention and avoid the weakening of the intervention effect and the recurrence of anxiety symptoms after a period of time. The researchers and the participants will summarize the various problems that may cause anxiety on the stage and discuss how to deal with them, and conduct situational simulations on these problems to prepare the participants psychologically, enhance their emotional control and deal with practical problems ability. In addition, participants also need to learn simple methods to regulate their own emotions, such as deep breathing, muscle relaxation, meditation, etc. These methods are often effective in relieving anxiety symptoms such as tremors and rapid heartbeat.

RESULTS

Comparison of before and after intervention of the stage anxiety self-rating scale for music performers

Due to the relatively large experimental sample, the research selected some representative research object data for display. Table 1 is the analysis results of the participants’ self-rating scale of stage anxiety for music performers. The test results of the music performer stage Anxiety Self-Rating Scale for the participants before the intervention, after the intervention, and three months after the intervention are shown in Table 1. The score reduction rate is greater than 25%, indicating that the intervention is effective. 50% indicated that the intervention effect was significant. It can be seen from the data in the table that the scores of the participants in the scale decreased significantly after the intervention. The results of the follow-up visit after three months showed that the scores of the participants decreased or remained the same after the intervention, and there was no increase.

Table 1. Comparison of music performers’ stage anxiety self-rating scale before and after intervention

<table>
<thead>
<tr>
<th>Participants</th>
<th>Before the intervention</th>
<th>After the intervention</th>
<th>The score reduction rate</th>
<th>Follow-up visit</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>20</td>
<td>10</td>
<td>50.0</td>
<td>8</td>
</tr>
<tr>
<td>B</td>
<td>16</td>
<td>9</td>
<td>43.8</td>
<td>9</td>
</tr>
<tr>
<td>C</td>
<td>21</td>
<td>11</td>
<td>47.6</td>
<td>10</td>
</tr>
<tr>
<td>D</td>
<td>18</td>
<td>10</td>
<td>44.0</td>
<td>10</td>
</tr>
<tr>
<td>E</td>
<td>22</td>
<td>10</td>
<td>52.5</td>
<td>9</td>
</tr>
<tr>
<td>F</td>
<td>19</td>
<td>11</td>
<td>42.1</td>
<td>9</td>
</tr>
</tbody>
</table>

Comparison of SCL-90 test results before and after intervention

Table 2 is the result analysis of participants’ SCL-90 test, which describes some results of participants’ SCL-90 test before and after the intervention, as well as the return visit three months after the intervention.

The changing trend of participants’ subjective satisfaction

Subjective satisfaction surveys were conducted on the participants every day during the study period. Due to the huge amount of data, only the data of the participants with the highest and lowest subjective satisfaction improvement are shown here. The change trend of their subjective satisfaction is shown in Figure 2. It can be seen from Figure 2 that the trend of subjective satisfaction curves of different participants is similar. During the intervention period, the satisfaction response increased, and the subjective satisfaction remained at a high level with small fluctuations after the intervention until three months later, did not see a significant decline. Among them, participant A’s subjective satisfaction increased by about 70, and
participant B was about 55.

### Table 2. Comparison of SCL-90 test results before and after intervention

<table>
<thead>
<tr>
<th>Participants</th>
<th>Stage</th>
<th>Obsessive-compulsive symptoms</th>
<th>Interpersonal sensitivity</th>
<th>Depression</th>
<th>Anxiety</th>
<th>Paranoid</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Before the intervention</td>
<td>1.70</td>
<td>2.67*</td>
<td>1.62</td>
<td>1.90*</td>
<td>2.17*</td>
</tr>
<tr>
<td>A</td>
<td>After the intervention</td>
<td>1.20</td>
<td>2.11</td>
<td>1.31</td>
<td>1.30</td>
<td>1.33</td>
</tr>
<tr>
<td></td>
<td>follow-up visit</td>
<td>1.10</td>
<td>1.44</td>
<td>1.08</td>
<td>1.20</td>
<td>1.17</td>
</tr>
<tr>
<td>B</td>
<td>After the intervention</td>
<td>2.3*</td>
<td>2.67*</td>
<td>2.15*</td>
<td>2.20*</td>
<td>1.67*</td>
</tr>
<tr>
<td></td>
<td>follow-up visit</td>
<td>1.80</td>
<td>2.00</td>
<td>2.08</td>
<td>1.60</td>
<td>1.50</td>
</tr>
<tr>
<td>C</td>
<td>After the intervention</td>
<td>2.10</td>
<td>2.18</td>
<td>1.31</td>
<td>1.80</td>
<td>1.67</td>
</tr>
<tr>
<td></td>
<td>follow-up visit</td>
<td>2.00</td>
<td>1.73</td>
<td>1.08</td>
<td>1.10</td>
<td>1.34</td>
</tr>
<tr>
<td>D</td>
<td>After the intervention</td>
<td>2.10</td>
<td>2.00</td>
<td>2.08</td>
<td>1.60</td>
<td>1.50</td>
</tr>
<tr>
<td></td>
<td>follow-up visit</td>
<td>2.10</td>
<td>1.67</td>
<td>1.46</td>
<td>1.60</td>
<td>1.33</td>
</tr>
<tr>
<td>E</td>
<td>After the intervention</td>
<td>1.90</td>
<td>1.89</td>
<td>1.77</td>
<td>2.10*</td>
<td>1.67</td>
</tr>
<tr>
<td></td>
<td>follow-up visit</td>
<td>1.50</td>
<td>1.33</td>
<td>1.54</td>
<td>1.90*</td>
<td>1.33</td>
</tr>
<tr>
<td>F</td>
<td>After the intervention</td>
<td>2.00</td>
<td>2.00</td>
<td>1.77</td>
<td>1.50</td>
<td>1.83</td>
</tr>
</tbody>
</table>

Note: * Means exceeding the normal standard.

![Figure 2. The trend of participants’ subjective satisfaction](image-url)
DISCUSSION

According to the before and after comparison of the participants’ stage anxiety self-rating scale, it can be found that the score reduction rate after the intervention is distributed in the interval of 42.1 to 52.5. According to the evaluation standard of the scale, all samples are higher than the effective standard of 25%, of which 2 names exceeded 50%, meeting the criteria for a significant effect. The score reduction rate after the intervention indicates that the psychological intervention is effective for the performance anxiety of vocal performance students, and the therapy using positive psychological mechanisms to reduce negative psychological mechanisms can significantly reduce their anxiety levels. The results of the follow-up visits to the participants three months after the intervention were analyzed, and it was found that there was no increase in the level of performance anxiety. 2 cases had the same score as after the intervention, and 4 cases had lower scores than after the intervention, with a difference of up to 2 points. This situation demonstrates the long-term effects of the psychological intervention, derived from the emotional control and thinking training of the participants during the intervention phase. Participants were able to self-regulate their anxiety through preparation, situational simulation, and emotional stabilization techniques, such as deep breathing and muscle relaxation.

Through the SCL-90 test results of the participants, it can be found that the anxiety scores of all the participants before the intervention are higher than the standard score, which means that they all have obvious anxiety symptoms. After the intervention, the anxiety scores of all participants decreased significantly, and the anxiety scores of almost 5 samples decreased in the range of 0.5 to 0.7, from the state higher than the standard score to the normal state. One sample still did not reach the normal state after the intervention. However, the anxiety score of this sample before the intervention reached 3.58, and it dropped to 2.12 after the intervention. The difference reached 1.46, and the decline was very large. Longer-term psychological intervention may be required to achieve normal levels. The above data illustrate the effectiveness of psychological intervention from another aspect. In addition to the anxiety dimension, it can be seen that the psychological intervention also has different degrees of efficacy in other dimensions of SCL-90, which improves the overall mental state of the participants. In this project, there was also no recovery of anxiety levels in the follow-up visit three months after the intervention, which once again proved the long-term effect of psychological intervention.

By analyzing the results of the subjective satisfaction survey, it was found that the subjective satisfaction of all subjects in the observation period before the intervention was relatively low, and the fluctuation was small and the state was stable, which indicated that the state of the participants did not change significantly before the intervention. This status can help researchers identify the relationship between changes in participants’ subjective satisfaction during the intervention and psychological intervention (Kwon 2020). During the intervention period, the subjective satisfaction of all the participants showed a rise of different magnitudes, the rise was larger, and the participants with the lowest increase in the sample also increased by 55 points. The subjective satisfaction of the participants before the intervention was distributed in the range of 18 to 30, and the distribution range was increased to 70 to 90 after the intervention, indicating that the effect was obvious. After the intervention, the participants achieved a high degree of subjective satisfaction. Stimulus anxiety was also lower. The continuous observation for 15 days after the intervention and the follow-up visit for 3 months after the intervention showed that the subjective satisfaction of the participants remained between 70 and 90 and did not decline, and the scores fluctuated less, which represented the subjective satisfaction of the participants and their interest in vocal music. The anxiety of the performance is controlled in a relatively normal and stable state.

According to the conversation between the researchers and the participants and the observation of the observer’s daily life and stage performance, the study found that the anxiety of the participants was significantly improved. Before the intervention, participant A reported that he had symptoms such as trembling and forgetting when performing, and he could not perform smoothly. After the intervention, his anxiety symptoms were greatly improved. Although the nervousness still existed, he could perform on stage normally, and after the end of the study, he could perform normally. Participated in a music competition. Participant B stated that in addition to performance, similar occasions in daily life have also been positively affected. In the final exam, he found that he was able to concentrate more than before and thought he had achieved better results than usual. Studies have explored the relationship between students’ anxiety state and academic performance and confirmed that higher test anxiety reduces students’ test performance, which is consistent with participant B’s experience (Silaj et al. 2021). Participant C believes that her psychological state has been improved in all aspects. Before the intervention, C reported that she would make unavoidable mistakes when performing on stage. Now the situation has improved significantly. A better experience than ever. Participant D had the most severe symptoms of performance anxiety before the intervention. He had experienced numbness in his hands and feet and vomiting before performing on stage, and he once considered giving up learning vocal performance. After the intervention, participant D said
that his anxiety symptoms were greatly relieved. Although he still had some negative reactions when facing a more important stage, the degree was much lower than that before the intervention, and he could sometimes be well controlled. Other participants also expressed that their performance anxiety and stage performance have improved considerably. From the perspective of the participants themselves, the effect of psychological intervention is also remarkable. Finally, from the overall experimental process, this study still has some limitations. A single psychological therapy is used in the study. If comparative therapy can be added, the study will be more perfect.

CONCLUSIONS

Performance anxiety disorder is a social anxiety disorder that particularly affects vocal performance students due to the characteristics of their majors. The study designed a psychological intervention strategy for the performance anxiety disorder of vocal music performance students, and analyzed the intervention effect. The intervention method is based on the psychological mechanism of anxiety and long-term psychological state regulation. The results of psychological evaluation of the participants who received the intervention test showed that their highest score reduction rate on the stage anxiety self-rating scale reached 52.5, indicating that the psychological intervention was effective. The results of the SCL-90 test also showed that the psychological intervention reduced the anxiety of the participants, mainly stage anxiety, and other negative psychological states. Among them, the anxiety score decreased by 1.46 points. From the perspective of a longer period of time, the psychological intervention also has a good effect. The return visit value of the stage anxiety self-rating scale of all participants after the intervention for three months is not higher than the results after the intervention, and the one with the largest decrease A score of 2 was reached, indicating that there was no recurrence of performance anxiety in all participants during the three-month period, and the effect of the intervention was stable. This study proves the effect of psychological intervention on performance anxiety among students majoring in vocal performance, but other psychological treatment methods were not included in the study as a comparison. The next step in research can diversify psychological treatments and find the best treatment.

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References


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