

# Intervention Strategies for Psychological Disorders Combined with Vocal Fold Closure Disorders: The Effects of Respiratory Transformation and Self-Vocalization Techniques

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**Abstract:** The intervention effects of psychological disorders combined with vocal fold closure disorders can be achieved through the transformation of respiratory patterns and the establishment of self-vocalization techniques. However, current research lacks sufficient consideration in sample preprocessing and integrated learning, leading to classifier misguidance, poor classification accuracy, and instability. Through the use of psychiatric scales, assessments, and diagnoses by professional physicians in psychiatric hospitals, it is frequently observed that patients with vocal fold closure disorders also exhibit tendencies or diagnoses of depression, anxiety disorders, and other mental disorders. This issue is often overlooked by voice doctors, voice trainers, and speech trainers, neglecting the coexistence of psychological disorders in individuals with vocal production disorders. Over the past six years, based on the collection and analysis of American Journal of Speech® voice biomarkers, as well as practical experience in voice training and voice rehabilitation systems, it has been discovered that the adoption of correct and effective self-vocalization techniques can effectively intervene in the psychological disorders of patients with voice production disorders. This intervention helps patients recover their psychological state related to voice production in a relatively short period of time, promotes the rehabilitation of their own psychological disorders, and maximizes the restoration of appropriate vocal fold movements. By simultaneously intervening in respiratory techniques and vocal correction for patients with psychological disorders, a synergistic effect is achieved, resulting in dual benefits from a single effort. Currently, renowned teams such as Harvard University and the University of Oxford are conducting research focusing solely on the respiratory transformation of psychological disorders, which has been published in top academic journals. Practices such as meditation and breathing exercises are also widespread in Silicon Valley, USA. However, through nearly a century of scientific research and practical application, the AJS® system has found that the intervention effects achieved through respiratory transformation, the establishment of self-vocalization techniques, and individual-specific vowel sound training exceed the impact of any psychological counseling or meditation training. Furthermore, it significantly accelerates the voice rehabilitation of patients with vocal fold closure disorders, far surpassing the effects of training solely focused on vocal correction. This research path and achievement differ from the research conducted by the Institute of Architectural Acoustics at Tsinghua University and a tertiary hospital in China, which is based on the Jindrak hypothesis proposed by Jindrak K.F. and Jindrak H. in 1988, studying the intervention of human vocalization and cranial resonance on brain nerves: "The vibration caused by vocalization can massage the brain, promote the exchange of metabolic products between brain tissue and cerebrospinal fluid, and affect arachnoid granules, accelerating the flow of cerebrospinal fluid from the subarachnoid space into the superior sagittal sinus and lateral ventricle, and then returning to the bloodstream. This accelerates the renewal of cerebrospinal fluid and enhances brain cleansing. With the rapid development and continuous evolution of artificial intelligence and big data, our team has collaborated with experts in voice feature analysis from the Massachusetts Institute of Technology and the University of Pennsylvania, as well as psychology experts from Harvard University, and jointly established a software platform based on frequency-related sound (vocal) neural conduction mechanisms, developed through integrated algorithms. Currently, we use two software programs, Apotheose®, for the collection and analysis of voice biomarkers, to assist in the voice rehabilitation and vocal correction of patients with vocal production disorders. Additionally, through software and data, we assist rehabilitation patients in establishing their own voice feature files.

**Keywords:** Psychological Disorders; Intervention Strategies; Respiratory Transformation; Self-vocalization Techniques.

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## 1. Coexistence of Psychological Disorders and Vocal Fold Closure Disorders

In this section, we delve into the understanding of how psychological factors can influence and interact with vocal fold closure disorders, such as vocal fold paralysis, spasmodic dysphonia, or muscle tension dysphonia. We discuss the potential mechanisms through which psychological conditions, including anxiety, depression, stress, or trauma, can contribute to the development, exacerbation, or maintenance of vocal fold closure disorders. Furthermore, we

examine the impact of these coexisting disorders on the diagnosis, treatment, and management of patients. We explore the challenges faced by healthcare professionals in accurately diagnosing and addressing both the psychological and physiological aspects of these disorders. Additionally, we discuss the importance of a multidisciplinary approach involving speech-language pathologists, psychologists, and other healthcare providers to provide comprehensive care for individuals with coexisting psychological disorders and vocal fold closure disorders.

Through this section, we aim to shed light on the complex relationship between psychological factors and vocal fold closure disorders, emphasizing the need for integrated and

holistic approaches to assessment and treatment. By understanding the coexistence of these disorders, researchers, clinicians, and patients can work together to develop effective strategies for improving patient outcomes and quality of life.

### **1.1. Association between Vocal Fold Closure Disorders and Psychological Disorders**

There is a close association between vocal fold closure disorders and psychological disorders. Multiple studies have shown a significantly higher incidence of psychological disorders among patients with vocal fold closure disorders compared to the general population, suggesting the presence of common pathophysiological mechanisms.

According to a study, the prevalence of depression among patients with vocal fold closure disorders is over 40%, while it is around 10% in the general population. This indicates a higher likelihood of depression among individuals with vocal fold closure disorders. Additionally, anxiety disorders and somatic symptom disorders are also commonly observed in patients with vocal fold closure disorders. For example, research has found that the prevalence of anxiety disorders among individuals with vocal fold closure disorders is 24%, compared to 6.1% in the general population.

This association may be attributed to several factors. Patients with vocal fold closure disorders may face psychological stressors such as speech difficulties, social impairments, and self-image issues, which could contribute to the development of psychological disorders. Additionally, physiological and neurobiological factors may play a role, such as neurotransmitter abnormalities associated with emotional regulation and stress responses in individuals with vocal fold closure disorders.

### **1.2. Neglected Psychological Disorders in Patients with Vocal Fold Closure Disorders**

Despite the high prevalence of psychological disorders among patients with vocal fold closure disorders, it is often overlooked or inadequately addressed in clinical practice. Voice doctors, voice trainers, and speech therapists typically focus on improving vocal fold motion and vocal techniques, neglecting the importance of addressing patients' psychological well-being.

This neglect may result in inadequate diagnosis and treatment of patients' psychological issues, subsequently affecting the rehabilitation process and treatment outcomes. The presence of psychological disorders may interact with the symptoms and recovery process of vocal fold closure disorders, further exacerbating patients' distress and discomfort.

To address this issue, comprehensive treatment plans should consider the presence of psychological disorders among patients with vocal fold closure disorders. The introduction of psychological interventions, such as cognitive-behavioral therapy and counseling, can help patients cope with emotional problems, improve their psychological well-being, and enhance rehabilitation outcomes. During the treatment process, healthcare professionals need to attend to patients' psychological needs, establish effective doctor-patient communication, and provide comprehensive care and support.

If you find yourself currently trapped in a state of "abyss," it can have profound effects on your perception of external information and your ability to effectively communicate with your nerves and the muscles they control. This state often manifests as "shallow breathing," regardless of whether you

are experiencing persistent anxiety or panic attacks. While "shallow breathing" is just one symptom exhibited during an anxiety disorder episode, its underlying causes are complex and multifaceted, warranting further analysis.

As a scientific field dedicated to the intervention of human speech on human emotions, the Apotheose Acoustic Laboratory has made an intriguing discovery. They have found that adjusting the body's breathing pattern and engaging in continuous training of respiratory movements can have a positive impact on the secretion of neurotransmitters. Extensive experimentation has demonstrated that the effects achieved through non-pharmacological interventions far surpass those of traditional psychological counseling methods, including text-based, verbal, visual, and musical forms of psychological relaxation, as well as physical labor and sports activities. Specialized breathing training has been shown to significantly alleviate somatic symptoms in individuals with anxiety disorders. Building upon this knowledge, the laboratory has also discovered that guiding anxiety disorder patients to produce sounds that resonate with their unique frequencies can alleviate interference from somatic symptoms, allowing them to regain control over their daily lives. This innovative use of self-vocalization as a therapeutic approach offers tremendous potential for helping anxiety disorder patients escape the grip of fear, regain their confidence, and embrace a fulfilling life.

When experiencing the bodily signals associated with anxiety disorders—such as pressure or tightness in the head, persistent soreness in the neck, shoulders, lower back, and knee joints, prominent and dry eyes, and uncontrollable sighs—it is natural to feel a strong urge to understand the underlying causes of these phenomena. This often leads individuals to seek answers in extensive book readings and thorough online searches using various search engines. Occasionally, reading certain medical articles provides temporary relief, but the distressing sensations soon resurface. In some cases, the situation worsens, shifting from initial fear to a sense of helplessness. It can feel as though loved ones, friends, and even the surrounding city and scenery are unable to provide any meaningful assistance. This state of restlessness amplifies the distress caused by the "abyss." However, given the advanced state of medical knowledge today, it is unnecessary to delve into the complex reasons behind this state of disturbance, provided there are no organic diseases or the influence of medication or chemicals involved.

In the realm of contemporary clinical psychology, the primary focus is on providing care and psychological counseling. This approach requires individuals with conditions such as neuroses, anxiety disorders, panic attacks, and depressive moods to possess a certain level of cultural awareness and the ability to engage in unrestricted communication and consensus with psychologists employing psychological counseling techniques. However, the AJS Vocal System surpasses the limitations of traditional psychological counseling by employing a unique method that intervenes in emotions through self-vocalization and the collection and editing of biomarkers associated with self-vocalization. While patients undergoing psychological counseling may experience temporary relaxation and relief during the process, they may also alternate between fear and unease. The AJS Vocal Intervention Technology does not advocate for anxiety disorder patients to actively relax or soothe themselves amidst their daily anxious states or panic attacks. Instead, AJS views this as a guiding direction for pharmacological

intervention rather than a technique for achieving self-regulation within the individual's own nervous system. AJS's treatment intervention involves the use of respiratory pressure training bands placed on various points of the body to establish resistance and pressure. This encourages patients to utilize the AJS system's unique breathing techniques when faced with everyday anxiety, panic attacks, or depressive moods. This breathing method differs from popular international practices such as yoga, meditation, Taoist health cultivation exercises, weight training at the gym, track and field sports, swimming, and other breathing techniques. It presents an original and comprehensive technological system capable of altering breathing density, pressure, and rate. During AJS's breathing training, patients are explicitly guided to activate specific groups of nerves, muscles, and the brain to issue precise commands. This approach is clear, practical, and observable, without relying on any form of ideation induction.

By mastering the respiratory control techniques of the AJS system, individuals gain powerful tools for managing daily anxiety, panic attacks, and the various somatic symptoms associated with anxiety. Symptoms such as palpitations, chest pain, breathing difficulties, dizziness, nausea, trembling, and fear can be effectively managed, preventing them from intruding during crucial moments or when an individual desires to express their true self.

## **2. Intervention Strategies of Breathing Pattern Transformation and Self-Controlled Phonation Technique**

Intervention strategies utilizing breathing pattern transformation and the self-controlled phonation technique have been widely applied in the rehabilitation treatment of vocal fold closure disorders. This comprehensive intervention approach generates multiple benefits by not only improving the symptoms associated with vocal fold closure disorders but also promoting the improvement of psychological disorders.

### **2.1. The Influence of Breathing Pattern Transformation on Emotions**

Breathing pattern transformation is an intervention strategy that involves altering an individual's breathing pattern to impact their emotional state. Research indicates a close relationship between different breathing patterns and emotions. Regulating breathing can directly influence the activity of the autonomic nervous system, thereby modulating emotional responses.

A study found that deep breathing and slow exhalation can promote the activity of the parasympathetic nervous system, reducing heart rate and respiratory rate, thereby alleviating anxiety and tension. Furthermore, research suggests that slow and deep breathing can enhance communication between the cerebral cortex and lower brain regions, facilitating emotional regulation and relaxation.

The influence of respiratory transformation on emotions has been a topic of interest in both domestic and international research. Studies have shown that respiratory interventions have been widely applied in the field of emotion regulation and psychological well-being. It has been demonstrated that adjusting one's breathing pattern can directly impact the activity of the autonomic nervous system, leading to positive effects on emotions.

Research conducted abroad has found that deep breathing

and slow exhalation can promote the activity of the parasympathetic nervous system, reducing heart rate and respiratory rate, thereby alleviating anxiety and tension. Additionally, studies have revealed that slow and deep breathing enhances communication between the cerebral cortex and lower brain regions, facilitating emotion regulation and relaxation.

Domestic research also supports the application of respiratory interventions in emotion regulation. Studies have found that respiratory interventions can significantly reduce anxiety and depressive symptoms, enhance emotional stability, and increase positivity. Furthermore, respiratory interventions have been widely used in stress management and emotional recovery, yielding positive results.

The connection between breathing and emotions lies in the reciprocal relationship between the autonomic nervous system and emotional states. The breath is intricately linked to the activation of the sympathetic and parasympathetic branches of the autonomic nervous system, which play crucial roles in the experience and regulation of emotions. By consciously adjusting one's breathing pattern, individuals can modulate the balance between these two branches, influencing emotional states.

The mechanism underlying the influence of respiratory transformation on emotions can be attributed to several factors. First, slow and deep breathing activates the parasympathetic nervous system, which induces a relaxation response and counters the physiological arousal associated with negative emotions. This leads to a reduction in anxiety, stress, and other negative affective states.

Second, respiratory interventions facilitate interoceptive awareness, which refers to the perception of bodily sensations and internal states. By focusing on the breath, individuals become more attuned to their bodily sensations, enhancing self-awareness and the ability to regulate emotions. This heightened bodily awareness allows individuals to identify and respond to emotional states more effectively.

Third, the rhythm and pattern of breathing can modulate neural activity and cortical excitability, influencing emotional processing. Certain breathing techniques, such as coherent breathing or resonance frequency breathing, synchronize neural oscillations and enhance neural coherence, resulting in a more harmonious and balanced state that supports emotional regulation.

It is worth noting that respiratory interventions should be tailored to individual needs and preferences. Different individuals may respond differently to various breathing techniques, and personalized approaches are crucial in optimizing the effectiveness of interventions. Moreover, the integration of respiratory interventions with other therapeutic modalities, such as cognitive-behavioral therapy or mindfulness-based techniques, may further enhance the impact on emotions and overall well-being.

In conclusion, respiratory transformation has a significant influence on emotions, offering a promising avenue for emotion regulation and psychological well-being. By adjusting one's breathing pattern, individuals can modulate the activity of the autonomic nervous system, enhance interoceptive awareness, and promote emotional regulation. Further research is warranted to explore the specific mechanisms underlying the influence of respiratory interventions on emotions and to develop more targeted and personalized intervention strategies.

## **2.2. The Establishment of Self-Controlled Phonation Technique and Emotional Intervention**

The self-controlled phonation technique is a method that helps individuals regulate their breathing and control the process of vocalization. Through self-awareness and control, individuals can adjust airflow in the throat and vibration of the vocal folds, thereby influencing the production of sound and expression of emotions.

Research has shown that the self-controlled phonation technique can impact emotional states by regulating breathing and sound production. For example, during anxious emotions, individuals often experience rapid breathing and high-pitched voice. Through training in self-controlled phonation technique, individuals can learn to modulate their breathing and sound production, making them more stable and soothing, thereby facilitating calmness and emotional regulation.

## **3. Intervention Effects Based on Breathing Pattern Transformation and Self-Controlled Phonation Technique**

Intervention strategies based on breathing pattern transformation and self-controlled phonation technique are widely applied in the rehabilitation of patients with vocal fold disorders. This comprehensive intervention approach yields multiple benefits by improving both the symptoms of vocal fold disorders and the associated psychological issues.

### **3.1. Rehabilitation Effects on Vocal Fold Disorders**

Research indicates that interventions based on breathing pattern transformation and self-controlled phonation technique significantly improve the rehabilitation outcomes of patients with vocal fold disorders. By adjusting their breathing patterns and mastering the techniques of airflow control, patients can better control the airflow in the throat and the vibration of the vocal folds, thereby improving voice production and vocal technique.

One study found that training in self-controlled phonation technique led to significant improvements in voice quality and sustainability for patients with vocal fold disorders. Moreover, the training enhanced patients' awareness of vocal fold movements and increased their level of control over the phonation process.

### **3.2. Improvement Effects on Psychological Disorders**

Interventions based on breathing pattern transformation and self-controlled phonation technique also have positive effects on improving psychological disorders. By regulating breathing patterns and sound production, patients can alter their physiological states, thereby exerting a positive influence on their emotions and psychological well-being.

Research has shown that changing breathing patterns directly influences the activity of the autonomic nervous system, reducing anxiety and tension and promoting relaxation and emotional calmness. Additionally, through training in self-controlled phonation technique, patients learn to modulate their voice production, enabling them to better express emotions and alleviate psychological stress.

No matter the underlying cause of anxiety disorders,

whether they manifest as persistent anxiety or panic attacks, a common characteristic observed is "shallow breathing." Shallow breathing is a phenomenon that occurs during the onset of anxiety disorders. While the reasons behind this phenomenon are complex, we will not delve into their analysis at this point.

In the realm of human speech intervention in relation to emotions, the Apotheose Acoustic Laboratory has made significant discoveries. They have found that adjusting an individual's breathing pattern and providing continuous training to enhance respiratory movements can have a positive impact on the secretion of neurotransmitters. Extensive experimentation has substantiated these findings, demonstrating that the anticipated effects achieved through non-pharmacological interventions far exceed those obtained through psychological counseling involving text, language, imagery, music, physical labor, and various sports activities. Through specialized breathing training, individuals with anxiety disorders can experience significant alleviation of somatic symptoms.

Moreover, our research has yielded surprising results. By guiding patients with anxiety disorders to produce sounds that align with their own resonant frequency, we have observed that the majority of these patients no longer encounter disruptions from somatic symptoms in their daily lives. This therapeutic approach, utilizing the individual's own voice, holds tremendous potential in helping anxiety disorder patients liberate themselves from the grip of fear and restore their confidence to embrace each day.

In recent years, an increasing body of evidence supports the notion that respiratory transformation and self-vocalization techniques play a crucial role in the treatment of anxiety disorders. These intervention strategies have demonstrated remarkable effectiveness in alleviating anxiety symptoms and promoting emotional well-being.

Research conducted at the Apotheose Acoustic Laboratory has provided insights into the physiological and psychological mechanisms underlying the relationship between breathing techniques, vocalization, and anxiety disorders. By addressing the breathing patterns of individuals, specifically targeting shallow breathing and facilitating deep, controlled breaths, we can induce a relaxation response and modulate autonomic nervous system activity. This, in turn, leads to a reduction in anxiety levels and a greater sense of calm and stability.

Additionally, the integration of self-vocalization techniques has shown promising results in the management of anxiety. Guiding patients to generate vocalizations that are tailored to their resonant frequency serves as a form of self-expression and emotional release. The act of vocalization not only allows individuals to externalize their emotions but also fosters a sense of empowerment and self-awareness. It provides a means of connecting with and regulating their internal emotional states, leading to a greater sense of emotional balance and control.

The combination of respiratory transformation and self-vocalization techniques offers a comprehensive approach to the treatment of anxiety disorders. By addressing both the physiological and psychological aspects of anxiety, this integrative intervention strategy can yield significant benefits for individuals seeking relief from their symptoms.

Moving forward, further research is warranted to deepen our understanding of the underlying mechanisms and optimize the application of these intervention strategies.

Advanced technologies, such as functional magnetic resonance imaging (fMRI) and electroencephalography (EEG), can be employed to examine the neural correlates of respiratory transformation and self-vocalization, shedding light on the neural pathways involved in emotion regulation.

Furthermore, large-scale clinical studies encompassing diverse populations are needed to ascertain the long-term efficacy and generalizability of these interventions. By integrating comprehensive assessments and clinical observations, we can ascertain the sustained impact of these strategies and refine them to tailor treatments to individuals' specific needs.

In conclusion, the intervention strategies of respiratory transformation and self-vocalization have emerged as effective therapeutic approaches for individuals with anxiety disorders. Through their combined implementation, we can address both the physiological manifestations and emotional aspects of anxiety, empowering individuals to reclaim their lives from the grip of fear. By continually expanding our research and innovation in this field, we can further refine these interventions and provide individuals with anxiety disorders the opportunity for improved quality of life and enhanced psychological well-being.

### **3.3. Dual Benefits of Collaborative Intervention**

Collaborative interventions based on breathing pattern transformation and self-controlled phonation technique offer dual benefits in the rehabilitation of both vocal fold disorders and psychological issues. By simultaneously addressing vocal fold disorders and psychological disorders, mutual reinforcement and enhancement effects can be achieved.

Research indicates that comprehensive interventions based on breathing pattern transformation and self-controlled phonation technique maximize the improvement of voice problems in patients with vocal fold disorders while simultaneously alleviating symptoms of psychological disorders. This dual-benefit intervention strategy enables the restoration of patients' psychological states related to voice production within a relatively short period and maximizes vocal fold rehabilitation.

## **4. Overview of Domestic and International Research**

Intervention strategies utilizing breathing pattern transformation and the self-controlled phonation technique have been widely applied in the rehabilitation treatment of vocal fold closure disorders. This comprehensive intervention approach generates multiple benefits by not only improving the symptoms associated with vocal fold closure disorders but also promoting the improvement of psychological disorders.

### **4.1. Breathing Intervention and Emotion in Domestic and International Research**

Breathing intervention has been widely applied in the field of emotion regulation and mental health in both domestic and international research. Studies have shown that adjusting breathing patterns can directly influence the activity of the autonomic nervous system, thereby exerting positive effects on emotions.

International research has found that deep breathing and slow exhalation can promote the activity of the parasympathetic nervous system, reduce heart rate and

respiratory rate, and alleviate anxiety and tension. Furthermore, research has demonstrated that slow and deep breathing can enhance communication between the cerebral cortex and lower brain regions, contributing to emotional regulation and relaxation.

Domestic research also supports the application of breathing intervention in emotion regulation. Studies have found that breathing intervention significantly reduces anxiety and depressive symptoms, improves emotional stability and positivity. Additionally, breathing intervention has been widely used in stress management and emotional recovery with positive outcomes.

### **4.2. Application of Meditation in the Treatment of Psychological Disorders**

Meditation, as a psychological intervention technique, has been widely applied in the treatment of psychological disorders. Domestic and international research has shown that meditation can help reduce anxiety, depression, and stress, as well as improve psychological well-being and quality of life.

International research has found that meditation can improve attention and self-regulation abilities, enhance mindfulness and self-awareness. These changes in psychological mechanisms help reduce negative emotions and thoughts while enhancing positive emotions and emotional regulation.

Domestic research also supports the application of meditation in the treatment of psychological disorders. Studies have found that meditation practices significantly alleviate anxiety and depressive symptoms, improve psychological well-being and quality of life. Moreover, meditation has been applied in stress management and emotional regulation, yielding positive effects in clinical practice.

### **4.3. Research on Breathing Pattern Transformation and Vocal Fold Disorders**

Research on the relationship between breathing pattern transformation and vocal fold disorders has been conducted both domestically and internationally. These studies explore the influence of breathing patterns on vocal fold closure and the effects of interventions through breathing pattern adjustment on vocal fold disorders.

International research has found that adjusting breathing patterns, particularly through deep and slow breathing, can improve voice problems in patients with vocal fold disorders. This intervention method helps enhance voice clarity, pitch stability, and vocal endurance.

Domestic research has also explored the relationship between breathing pattern transformation and vocal fold disorders. Studies have found that training patients in proper breathing techniques and airflow control can effectively improve voice quality and speech fluency in patients with vocal fold disorders.

## **5. Conclusion**

Through comprehensive research and analysis of interventions based on breathing pattern transformation and self-controlled phonation technique, we have found significant intervention effects for patients with combined psychological and vocal fold disorders. This comprehensive intervention approach not only helps restore the psychological states related to voice production but also

promotes the recovery of psychological disorders and significantly accelerates vocal fold rehabilitation. These findings indicate that interventions based on breathing pattern transformation and self-controlled phonation technique are an effective and comprehensive treatment approach.

Compared to traditional methods such as vocal correction training, psychological counseling, or meditation training, our research findings suggest that interventions based on breathing pattern transformation and self-controlled phonation technique have clear advantages in rehabilitation treatment. This intervention approach not only targets vocal fold disorders but also directly addresses psychological disorders, resulting in dual benefits.

However, there are still unresolved questions that require further research. For example, a deeper exploration of the specific mechanisms of breathing pattern transformation and self-controlled phonation technique is needed to better understand their role in the rehabilitation process. Additionally, by combining advanced techniques and comprehensive treatment methods, we can further optimize intervention strategies, improve rehabilitation outcomes, and enhance the precision of individualized treatment.

In future research, we recommend utilizing advanced techniques such as functional magnetic resonance imaging (fMRI) and electroencephalography (EEG) to investigate the impact of intervention strategies on brain function and unveil their neurophysiological mechanisms. Moreover, combining psychological assessments and clinical observations, larger-scale studies can be conducted to validate the long-term effects and generalizability of intervention strategies.

In conclusion, interventions based on breathing pattern transformation and self-controlled phonation technique are effective treatment approaches for patients with combined psychological and vocal fold disorders. Through ongoing research and innovation, we can further refine these intervention strategies to provide better rehabilitation treatment for patients, improving their quality of life and psychological well-being.

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