

Current Situation Analysis of Eye Health Management Integrated with Psychotherapy

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Abstract: There are neural connections between the visual pathway and the emotional regulation system, and ocular organic diseases and psychological problems interact bidirectionally. Against the background of excessive use of electronic products, increasing mental stress, and population aging, the incidence of visual fatigue, dry eye, glaucoma, fundus diseases, and other eye diseases is rising and tending to be younger. Chronic eye diseases, visual impairment, and medical burden are prone to induce negative emotions, while psychological stress can aggravate eye diseases through mechanisms such as neuroinflammation and endocrine disorders, forming a vicious circle. At present, China's eye health management is transforming into a full-cycle and integrated service model, but clinical practice still has the limitation of attaching importance to treatment while neglecting psychology. Although psychological intervention is effective, it faces practical problems such as disciplinary barriers, a lack of screening, insufficient talent, and the absence of unified standards. This paper puts forward strategies such as integrated diagnosis and treatment, hierarchical intervention, and interdisciplinary collaboration, so as to provide theoretical and practical reference for constructing a mind-body integrated ophthalmology diagnosis and treatment model, making up for the shortcomings of psychological services, and improving the full-life-cycle eye health service system.

Keywords: Eye health management; Psychological intervention; Ophthalmic and psychological comorbidity; Psychosomatic medicine; Interdisciplinary diagnosis and treatment

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1. Introduction

Vision is the core perceptual function of the human body. Its conduction pathway is closely connected with the brain's emotional regulation area at anatomical, neural, and immunological levels, and psychological emotional fluctuations can directly affect the homeostasis of the ocular internal environment^[1]. With the transformation of modern lifestyle, factors such as long-term close eye use, high-intensity work pressure, and high incidence of chronic diseases in the elderly have led to the continuous increase of various functional and irreversible chronic eye diseases. The pathogenesis of eye diseases is no longer limited to simple organic damage, and psychological and social factors play key roles in the occurrence, progression, and recurrence of

eye diseases^[2].

Clinical studies have shown that most patients with chronic eye diseases are accompanied by varying degrees of depression, anxiety, poor sleep quality, and somatic symptoms, which directly affect clinical treatment compliance and long-term rehabilitation outcomes^[3]. Traditional ophthalmology clinical practice mainly focuses on physical treatment such as medication, surgery, and optical correction, while ignoring the assessment and targeted intervention of patients' psychological state for a long time, making it difficult to break the vicious cycle of mutual aggravation between eye diseases and psychological problems. In this context, integrating psychological intervention into the whole-process eye health management and constructing a new mind-body collaborative diagnosis and treatment model has become a research hotspot in the fields of ophthalmology and psychosomatic medicine. Based on domestic and foreign research achievements in recent years, this paper systematically sorts out the current situation, existing bottlenecks, and development direction of the integration of eye health management and psychotherapy, so as to provide a reference for clinical practice.

2. Comorbidity mechanism and epidemiological status of eye diseases and psychological disorders

2.1. Epidemiological characteristics of comorbidity

With the continuous development of psychosomatic medicine, a number of large-sample clinical surveys have confirmed the epidemiological characteristics of eye diseases complicated with psychological abnormalities. Compared with healthy people, patients with various eye diseases have a significantly higher incidence of anxiety, depression, insomnia, and somatic symptoms. The comorbidity ratio and severity of emotional disorders are closely related to the type and course of eye diseases, degree of visual function damage, and treatment burden, showing distinct disease differentiation characteristics.

Dry eye disease has the highest clinical incidence and is most closely associated with psychological factors among psychosomatic eye diseases. Epidemiological data show that the prevalence of dry eye among Chinese adults exceeds 30%, and the prevalence among long-time desk workers and screen-dependent groups is more than 50%. Patients with dry eye suffer from intractable discomfort, such as dry eyes, burning sensation, foreign body sensation, fluctuating vision, and photophobia, with recurrent symptoms that are difficult to cure completely. They are prone to emotional sensitivity, irritability, and decreased concentration. Long-term physical discomfort limits daily social activities and outdoor travel, reduces work efficiency, lowers patients' willingness to socialize and self-identity, and eventually induces anxiety and depression. Multiple cross-sectional surveys show that the incidence of anxiety in patients with moderate and severe dry eye reaches 45–60%, the incidence of depression exceeds 35%, and the proportion complicated with sleep disorders is over 70%. Mild emotional problems are prevalent, and the detection rate of moderate and severe psychological comorbidity remains high^[4].

As a lifelong irreversible blinding eye disease, glaucoma has a more prominent ophthalmic and psychological comorbidity problem. It is characterized by progressive visual field defect and optic nerve atrophy, which cannot be completely cured, with a potential lifelong risk of vision loss. Patients are trapped in the fear of blindness, helplessness of lifelong disease, and psychological burden of long-term medication, staying in a high-stress state for a long time. Clinical studies have shown that the comorbidity rate of anxiety and depression in patients with primary open-angle glaucoma and angle-closure glaucoma is significantly

higher than that of patients with common chronic diseases. Emotional fluctuation and mental tension are independent risk factors for sudden elevation of intraocular pressure and accelerated optic nerve damage, forming a vicious cycle of emotional fluctuation, increased intraocular pressure, aggravated condition, and intensified anxiety.

Severe visual impairment diseases, such as diabetic retinopathy and age-related macular degeneration, directly affect patients' daily self-care ability. Coupled with the long-term economic pressure of treatment, they greatly increase the risk of severe psychological problems such as severe depression and pessimism. Elderly patients have a narrow social circle and weak social support. They are more likely to feel lonely and desperate when facing vision decline, which further aggravates psychological disorders and seriously affects disease prognosis ^[5].

Among adolescents, high myopia incidence, binocular visual dysfunction, and persistent visual fatigue are closely related to academic load and emotional depression. Psychological imbalance is an important inducement for accommodation spasm, visual fatigue, and pseudomyopia. High-intensity mental tension causes continuous contraction and spasm of extraocular muscles and ciliary muscles, aggravating visual fatigue and refractive errors; while long-term blurred vision aggravates adolescents' inferiority and learning anxiety, hindering physical and mental health development ^[6]. Young and middle-aged workplace groups suffer from long-term high-pressure work, emotional internal friction, and staying up late, resulting in long-term autonomic nervous disorder, which is also an important psychological inducement for intractable visual fatigue and meibomian gland dysfunction.

Ocular lesions and emotional disorders form bidirectional regulation through multiple pathways. From the perspective of immune inflammation, negative emotions induce the release of pro-inflammatory mediators such as tumor necrosis factor and interleukin, destroy the stability of the ocular epithelial barrier, and aggravate chronic inflammation of dry eye and fundus diseases; long-term ocular chronic stimulation continuously activates the central emotional regulation area and induces abnormal emotional regulation ^[7].

At the level of endocrine regulation, negative emotions such as anxiety and depression over-activate the hypothalamic-pituitary-adrenal axis, causing hormone disorder and ocular peripheral vasoconstriction, reducing ocular surface blood supply and optic nerve tolerance to damage, and accelerating the progression of glaucoma and retinopathy ^[8]. Meanwhile, autonomic nervous disorder leads to abnormal tear secretion and ocular muscle accommodation spasm, inducing functional eye diseases such as visual fatigue, forming a bidirectional pathogenic closed loop.

3. Current situation of domestic eye health management

3.1. Gradual establishment of a full-chain health management system

In recent years, the state has attached great importance to national visual health, issued a number of special eye health policies, continuously improved the public service network of eye health, and promoted the transformation of China's eye health management from traditional post-onset treatment to the full-cycle management mode of early prevention, early screening, early intervention, and long-term follow-up, with a preliminary full-chain service system established.

Primary medical institutions regularly carry out vision screening for adolescents, fundus disease screening for the elderly, and screening of ocular complications of chronic diseases, establish health files for high-risk groups, and realize dynamic monitoring and management. Ophthalmic specialized institutions

implement standardized management measures such as long-term follow-up, individualized medication guidance, and lifestyle intervention for chronic eye diseases such as glaucoma, dry eye, and diabetic retinopathy, effectively delaying the decline of visual function and reducing the risk of mass blindness. Relying on internet technology, online medical services are gradually popularized, breaking time and space constraints, and providing long-term convenient health management services for patients with chronic and elderly eye diseases.

3.2. Shortcomings of current eye health management

The current eye management model still has obvious shortcomings. Firstly, the diagnosis and treatment concept is one-sided, focusing on the examination and symptomatic treatment of ocular organic lesions, while psychological screening is not included in the routine diagnosis and treatment process of chronic eye diseases, resulting in a prominent missed diagnosis of psychological comorbidity. Secondly, the interdisciplinary collaboration mechanism is imperfect. There is no regular consultation and two-way referral mechanism between ophthalmology and psychology/psychiatry, and there is a lack of psychological assessment norms adapted to ophthalmology scenarios^[9]. Thirdly, the service coverage for different groups is unbalanced, and the combined eye and mental health management services for high-pressure professionals, chronic disease patients, and low-vision elderly groups are insufficient. Finally, health science popularization content is single, mostly focusing on eye disease prevention and scientific eye use, lacking publicity on the correlation between emotional stress and eye health.

4. Application status of psychological intervention in ophthalmology clinical practice

4.1. Common psychological intervention technologies and applications

At present, non-drug psychological intervention schemes adapted to ophthalmology clinical practice have been gradually improved. Cognitive behavioral intervention is the most widely used clinical technology, which can correct patients' negative cognition and catastrophic thoughts about diseases, alleviate disease fear and diagnosis and treatment anxiety, stabilize autonomic nerve function, and significantly improve the treatment compliance of patients with chronic glaucoma and fundus diseases.

Mindfulness stress reduction training, biofeedback therapy, and short-term relaxation training are simple and time-saving, suitable for outpatient rapid intervention. They can effectively improve the physical discomfort and mental tension of patients with visual fatigue and dry eye.

For patients with moderate emotional abnormalities, short-term focused intervention and group psychological counseling can alleviate disease stigma and loneliness. For patients complicated with severe anxiety and depression, professional psychiatrists can conduct an evaluation and adopt a combined drug and psychological counseling scheme to realize simultaneous physical and mental treatment.

4.2. Clinical application effect and research progress

A large number of controlled clinical trials have confirmed that combined psychological intervention on the basis of routine ophthalmic treatment can effectively improve tear secretion indicators, stabilize intraocular pressure fluctuation, relieve ocular muscle accommodation spasm, and reduce the recurrence risk of functional eye diseases. Foreign countries have incorporated psychological state assessment into

the standardized management of chronic glaucoma and macular degeneration, confirming that long-term emotional management can delay the progression of visual function damage. Domestic-related research has gradually focused on psychosomatic eye diseases such as dry eye and central serous chorioretinopathy, verifying that early emotional intervention can shorten the course of disease and reduce drug dependence, with good clinical application value.

4.3. Practical obstacles to clinical promotion

The large-scale implementation of psychotherapy in ophthalmology still faces many restrictions. On the one hand, ophthalmic medical staff generally lack systematic psychological professional training, with insufficient ability to identify hidden emotional problems, and cannot carry out basic psychological counseling. On the other hand, professional psychological medical resources are generally in short supply, and psychological specialists cannot cover ophthalmic outpatient and long-term chronic disease follow-up scenarios, resulting in high intervention costs and insufficient accessibility. In addition, unified diagnosis and treatment guidelines for eye diseases complicated with psychological abnormalities have not been issued in China, lacking standardized intervention schemes, treatment courses, and efficacy evaluation criteria, restricting the standardized promotion of relevant technologies.

5. Prominent problems in the integration of eye health management and psychotherapy

5.1. Highly solidified medical division mode and insufficient popularization of the mind-body treatment concept

Traditional clinical specialty division takes the organ system as the core. Ophthalmology focuses on local organ lesions, while psychology focuses on mental and emotional diseases. Long-term divided diagnosis and treatment lead to fragmented diagnosis and treatment thinking. Hospital management has not attached importance to the construction of interdisciplinary disciplines. Psychological intervention has always been defined as auxiliary and supplementary treatment, not included in the standardized diagnosis and treatment path of chronic eye diseases, and lacking institutional support for integrated development.

5.2. Absence of a full-process psychological screening system and weak early intervention capacity

Psychological and emotional assessment links are not set in all procedures, including physical examination, primary screening, and specialized diagnosis and treatment. There is a lack of simple screening tools adapted to rapid ophthalmic diagnosis and treatment. Mild psychological problems remain hidden for a long time until developing into severe comorbidities, missing the optimal time for early intervention.

5.3. Severe shortage of compound professional talents

There is a huge gap in compound talents who master both ophthalmology professional knowledge and psychological assessment, basic counseling, and psychosomatic disease diagnosis and treatment capabilities. The continuing education system is disconnected: ophthalmology continuing education lacks mental health courses, while psychological professionals lack basic medical and ophthalmic knowledge, with a blank interdisciplinary talent training mechanism^[10,11].

5.4. Deep-rooted patients' cognitive misconceptions and insufficient treatment compliance

Affected by traditional health concepts, most patients believe that eye diseases only need ocular treatment, regard psychological counseling and emotional intervention as redundant treatment, and show strong resistance. Some patients have a stigma of mental illness, deliberately hide negative emotions, and refuse psychological assessment and intervention, seriously affecting the progress of integrated diagnosis and treatment.

5.5. Imperfect evaluation system and difficulty in quantifying the value of integrated diagnosis and treatment

The existing ophthalmic efficacy evaluation indicators are mainly objective physical indicators such as intraocular pressure, visual acuity, fundus structure, and tear indicators, without incorporating comprehensive mind-body indicators such as quality of life, emotional state, sleep quality, and treatment compliance. It is difficult to quantify the long-term benefits of psychological intervention, restricting policy support and clinical promotion.

6. Countermeasures and future development trends of integrated development

6.1. Construction of an integrated interdisciplinary diagnosis and treatment mode of ophthalmology and psychology

Break the discipline segmentation, establish a regular joint consultation mechanism between ophthalmology and clinical psychology/psychiatry. Incorporate simple emotional scale screening into routine examination items of chronic and recurrent eye diseases. Formulate psychological intervention operation specifications for common eye diseases such as dry eye, glaucoma, and visual fatigue according to disease characteristics, and promote the standardized and normalized implementation of mind-body collaborative treatment.

6.2. Implementation of hierarchical and precise psychological intervention

Establish a hierarchical intervention scheme according to the severity of emotional abnormalities: patients with mild emotional tension and anxiety receive health education and basic emotional counseling by ophthalmic medical staff; patients with moderate psychological abnormalities receive professional intervention through short-term psychotherapy; patients with severe ophthalmic and psychological comorbidity implement two-way referral, adopting combined drug and psychological intervention therapy.

6.3. Strengthen talent training and national health science popularization

Incorporate psychosomatic medicine and basic mental health knowledge into the continuing education of ophthalmology, and carry out training on simple psychological assessment and counseling skills for ophthalmic medical staff. Carry out multi-channel health science popularization, popularize the correlation between emotional stress and eye diseases, correct cognitive misconceptions, and improve patients' recognition and acceptance of psychological intervention^[12,13].

6.4. Improve the long-term management system based on smart medical care

Rely on digital means such as internet medical treatment and online follow-up to establish long-term eye and mental health files for patients with chronic eye diseases, realize simultaneous monitoring of emotional

state and ocular condition outside the hospital, provide remote counseling, improve the full-cycle integrated management system, and reduce disease recurrence rate ^[14,15].

7. Conclusion

Eye health and mental health are highly integrated. Psychological factors run through the whole process of the occurrence, development, and rehabilitation of eye diseases, forming a close two-way regulatory relationship. China's eye health management service system continues to be improved, and the application value of psychological intervention in the diagnosis and treatment of ophthalmic comorbidities has been widely verified. However, there are still many problems, such as lagging diagnosis and treatment concepts, insufficient disciplinary collaboration, uneven resource allocation, and a lack of standardized norms. In the future, it is necessary to change the traditional single physical treatment thinking, accelerate the in-depth integration of eye health management and psychological intervention, build an integrated service model of screening, diagnosis, intervention, and rehabilitation, comprehensively improve the quality of life and rehabilitation outcomes of eye disease patients, and boost the high-quality development of the national eye health cause in China.

Disclosure statement

The authors declare no conflict of interest.

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