Study on Prevention and Intervention of 86 Cases of Adult Visual Fatigue Syndrome

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Abstract: In order to reduce the incidence of modern lifestyle diseases, 86 adult patients with visual fatigue syndrome who visited the ophthalmology department of our hospital were randomly divided into an observation group of 43 cases with a single number and a control group of 43 cases with a double number. The selected subjects were screened using the SCL-90 Symptom Self Rating Scale, and were investigated and analyzed using the Anxiety Scale, Depression Scale, and Quality of Life Scale. The control group received health guidance, while the observation group received guided and maintenance preventive interventions. Progressive eye disease in the observation group was controlled at over 90%, while in the control group; progressive eye disease was controlled at 68%.

Keywords: Adult; Visual fatigue; Syndrome; Prevention; Intervene

1. Introduction

With the widespread penetration of video display terminals (VDTs) such as computers, televisions, and game consoles into daily work, study, entertainment, and family life, people experience a series of symptoms such as dry eyes, burning pain, blurred vision, headaches, shoulder soreness, back pain, and mental fatigue [1]. Common visual impairment and eye discomfort in VDT; Headache, shoulder soreness, lower back pain, numbness in the joints of the limbs and fingers, and body cold; Symptoms such as lack of concentration and fatigue do not attract much attention from people. If left unchecked, small problems can ultimately cause anxiety and even affect learning or work efficiency, forming a vicious cycle. In 1975, the renowned American psychologist L.R. Derogatis developed the SCL-90 Symptom Self Rating Scale [2], which consists of 90 items, including sensation, emotion, thinking, consciousness, behavior, lifestyle habits, interpersonal relationships, diet and sleep, to assess whether people have a certain psychological disorder and the degree of the disorder.

2. Materials and Methods

2.1 General Information

86 patients with visual fatigue syndrome who visited the ophthalmology outpatient department of our hospital from January 2022 to September 2022 were selected as the research subjects. The age of the patients was 22-61 years old, with an average of (45.24 ± 14.56) years old. There were 56 males and 30 females, and 15 had middle school education, 30 had high school education, and 41 had university education. Inclusion criteria: (1) Diagnosed as visual fatigue syndrome through ophthalmic examination; (2) The patient has independent judgment ability; (3) The patient voluntarily cooperates with the study and signs a consent form. Exclusion criteria: (1) For patients with severe cardiovascular and cerebrovascular diseases; (2) For patients who have lost their listening, reading, and writing abilities.

2.2 Method

2.2.1 Comparison of negative emotions, coping styles, and quality of life scores before and after psychological intervention

The use of questionnaire survey forms. We used the SCL-90 Symptom Checklist-90 to conduct one-on-one, face-to-face evaluations on patients, guiding them to answer the SCL-90 questionnaire. We created a questionnaire based on dimensions such as somatization symptoms, anxiety, depression, interpersonal sensitivity, hostility, obsessive-compulsive symptoms, phobia, paranoia, psychosis, and

others, with a single dimension score of 1-5 points [3]. Normal individuals with no physiological or psychological abnormalities were randomly selected from the domestic norm for SCL-90 evaluation.

2.2.2 Intervention strategies

Cognitive intervention: To understand the cognitive status of patients with visual fatigue syndrome, 10 factors of SCL-90 were used to reflect the symptoms of 86 patients in a certain aspect. When the score of a certain factor of the patient is greater than 2, it indicates that the patient has psychological health problems in this area. The total symptom index score is between 1-1.5, indicating that the patient does not have the symptoms listed in the scale; Scores between 1.5 and 2.5 indicate occasional symptoms of the patient; A score between 2.5 and 3.5 indicates that the patient has mild to moderate symptoms; A score between 3.5 and 4.5 indicates that the patient has moderate to severe symptoms [4]; A score between 4.5 and 5 indicates that the patient has severe symptoms. Therefore, patients with scores between 3.5 and 5 in the survey need to receive cognitive intervention, using health education prescriptions, videos, health education lectures, and health manuals as auxiliary tools to patiently explain the relevant knowledge of visual fatigue syndrome to patients and help them establish correct disease cognition.

Psychological guidance intervention: Based on the patient's questionnaire survey scores, combined with the patient's education level and age, have face-to-face conversations with the patient, allowing them to confide in the reasons for loss of vitality, decreased interest in life, and lack of motivation. Ask the patient if they have symptoms such as irritability, nervousness, restlessness, tension, and body tremors. After communication, understand the patient's true inner thoughts and physical symptoms, respect the thoughts expressed by the patient, and analyze and summarize their physiological and psychological problems based on their physical and mental feelings. Provide patients with guided venting, comfort, support, and encouragement, and recommend cases of visual fatigue syndrome that have been well treated in the past for reference.

Social and family emotional support: It is important to communicate with the patient's family members in a timely and proactive manner, informing them of the impact of family care on the patient's treatment compliance and psychological status. For patients with suicidal tendencies, it is important to instruct their family members to accompany the patient, take good care of the patient, and provide care and consideration. Nursing staff should tell patients stories to enhance their willpower, play videos or videos to build confidence, and help patients overcome their bad habits of relying on electronic products and participate in positive cultural and sports activities [5].

2.2.3 Preventive interventions

(1)Moderate rest and maintenance intervention: Whether working at a desk at work or watching movies and TV shows at home, use your eyes for one hour each time and rest for 10-15 minutes. At the same time, stretch your body and do some mild exercise to prevent stiffness and promote blood circulation; The following methods are commonly used for eye maintenance: 1) 4-step eye protection method [6]: A. Closed eye relaxation method: Play soothing music, calm and close your eyes for a moment, gently cover your eyes with both palms, support your elbows on the edge of the table, and relax your muscles as much as possible. After 30 seconds, open your eyes and blink multiple times. Do 3-5 times a day. B. The method of calming down and nourishing the eyes: sit upright, relax the whole body, slightly close your eyes, place your hands on your knees, palms facing upwards (for those with cardiovascular and cerebrovascular diseases, palms facing downwards), and your mind will change into a mindset: I am in the Qi, Qi is in me, Heaven and Man are in harmony, Qi is for me. Rest for 15 minutes, then slowly open your eyes, take three deep breaths, and the Qi will sink into the elixir field. Do it every morning and evening. C. Gazing massage method: Close your eyes - turn your eyes from right to left - turn left to right 5 times each, quickly open your eyes and gaze into the distance; Stand or sit steadily, gaze with your eyes at the left, right, upper right corner, upper left corner, lower right corner, and lower left corner in sequence, repeating 5 times; Massage the eye sockets in a circular pattern from top to bottom using clean middle fingers starting from the concave corners on both sides of the nasal bridge, and then blink 20 times. D. Eye rotation method: Sit by the bed or chair, turn

your eyes 5 times to the left, and look straight ahead for a moment. Do it once a day, morning and evening, without interruption, and you will see results over time.

2) 24-hour hourly eye protection method [7]: First period: 7:00-9:00, to improve dark circles, edema, and congestion under the eyes; Second period: 10:00 to improve eye soreness, facial and periocular skin tightness; Third period: 12:00 to improve the condition of weak eye opening, neck and shoulder pain, and cold hands and feet; Fourth period: 15:00 to improve blurred vision, dry eyes, and lower back pain; Fifth period: 18:30 to improve the condition of dull eyes, weakness, and overall weakness; The sixth period: 21:40 improves the dryness and obvious eye bags caused by staying up late; Seventh period: 22:00 to improve sleep quality. The above seven periods are the most important methods of 24-hour eye care, which need to be combined with eye yoga "Candlelight Meditation" [8] to help soothe the mood, stabilize emotions, and strengthen vision.

(2)Regular medical glasses. Be cautious when wearing glasses, contact lenses, and beauty glasses. Not suitable for wearing glasses or contact lenses for a long time, as it can lead to eye fatigue and headaches; Wearing glasses with an inappropriate degree can easily lead to a decrease in vision; Wearing contact lenses and beauty glasses can easily lead to the following complications: eye sensitivity, dry eye syndrome, keratitis, conjunctivitis, corneal injury, corneal edema, corneal ulcer, giant papillary conjunctivitis, corneal vascular hyperplasia, etc. Therefore, wearing them is not recommended. Early use of radiation resistant glasses can alleviate eye damage, as well as alleviate headaches and shoulder discomfort.

(3)Improve the work environment. Adjusting the brightness, temperature, and humidity of the office environment, study rooms, and gaming rooms to a comfortable level can reduce eye pressure; Adjust the height and color of the computer desktop. It is recommended to adjust the computer to a level with the eyes, and set the background color of the computer desktop to black or gray to reduce the visual stimulation caused by colors.

(4) Pay attention to dietary nutrition. Develop a good habit of eating regularly, pay attention to reasonable nutritional combinations, increase the intake of eye protection foods such as carrots, egg yolks, spinach, goji berries, and pig liver, to maintain the balance of the body's autonomic nervous system, and avoid irritability and insomnia caused by eye discomfort.

2.3 Observation Indicators

2.3.1 SCL-90 evaluation results and domestic norm score indicators

Compare the SCL-90 evaluation results of 86 patients with visual fatigue syndrome with the domestic norm. The score of this scale is between 12 and 60 points. A score of 36 or above indicates that the individual has significant physical discomfort, often accompanied by symptoms such as headaches and muscle soreness. Scores below 24 indicate no significant physical symptoms. Overall, the higher the score, the stronger the physical discomfort, the lower the score, and the less obvious the symptom experience.

2.3.2 Anxiety and depression assessment indicators

1. Anxiety: According to the Chinese norm, the cut-off value for the standard score of the Self Rating Anxiety Scale (SAS) is 50 points, of which 50-59 points are mild anxiety, 60-69 points are moderate anxiety, and 70 points or more are severe anxiety. Individuals with scores above 70 are prone to irritability, nervousness, and even panic attacks. In short, the higher the score, the more obvious the anxiety [9], the lower the score, and there will be no anxiety.

2. Depression: According to the results of the Chinese norm, a total score of less than 7 points for the cut-off value of depression (SDS) assessment is considered normal; A total score of 7-17 may indicate depression; A total score of 17-24 indicates depression; A total score greater than 24 points is considered severe depression [10]. The higher the score, the more severe the depressive symptoms are. In short, the higher the score, the more obvious the degree of depression, and the lower the score, indicating that depression will not occur.

The negative emotion scores of patients before and after intervention were evaluated using the Self Rating Anxiety and Depression Scale (SAS and SDS), with the highest score of 100 points, which is directly proportional to the severity of negative emotions [11]; The coping style rating selection trait coping style

questionnaire consists of 10 items for positive and 10 items for negative coping, with a total score of 10-50 points. The higher the positive coping score, the lower the negative coping score, and the more positive the attitude [12].

2.3.3 Quality of life evaluation indicators

This assessment adopts the World Health Organization's Quality of Life Assessment Brief (WHO QOL-BREF), with a quality of life rating of 60 points, 51-60 points for good, 41-50 points for good, generally 31-40 points, 21-30 points for poor, and<20 points for extremely poor quality of life. The score is directly proportional to the quality of life [13].

2.4 Statistical Methods

Using SPSS 15.0 software, count data is expressed in terms of rate, rows χ 2-test, the measurement data is represented as (x ℃± s), and t-test is performed. There is a significant difference when P<0.05.

The psychological assessment results of patients with visual fatigue syndrome are shown in Table 1.

Table 1. Psychological Assessment Results of Patients with Visual Fatigue Syndrome (Points)

project	Patient score (n=86)	Domestic norm division (n=100)	p
Somatic symptoms	4.26 ± 1.64	1.42 ± 0.37	<0.05
Anxiety	4.84 ± 1.46	1.39 ± 0.62	<0.05
Depression	3.86 ± 1.72	1.54 ± 0.48	<0.05
Interpersonal sensitivity	3.38 ± 1.25	1.72 ± 0.47	<0.05
Hostile	1.82 ± 0.46	1.46 ± 0.73	>0.05
Compulsive symptoms	1.820 ± 0.58	1.68 ± 0.63	>0.05
Horror	1.74 ± 0.54	1.64 ± 0.52	>0.05
Paranoia	1.58 ± 0.46	1.61 ± 0.72	>0.05
Psychotic	1.64 ± 0.53	1.42 ± 0.59	>0.05

Comparison of negative emotions, coping styles, and quality of life scores before and after psychological intervention is shown in Table 2 and Table 3.

Table 2. Comparison of Adverse Emotions and Coping Style Scores of Patients Before and After Intervention (Score)

Time	Anxiety score	Depression score	Actively respond to ratings	Negative coping rating
Before intervention	59.82 ± 7.68	23.73 ± 8.26	33.42 ± 3.66	24.72 ± 3.54
After intervention	40.78 ± 8.24	15.52 ± 4.15	36.81 ± 3.73	18.76 ± 2.27
p	<0.05	<0.05	<0.05	<0.05

Table 3. Comparison of Quality of Life Scores of Patients Before and After Intervention (Score)

Time	Physiological field	psychological domain	Environmental field	Social relations field
Before intervention	79.82 ± 5.86	80.64 ± 5.48	81.42 ± 4.68	80.78 ± 5.94
After intervention	89.64 ± 8.44	88.63 ± 8.65	86.75 ± 7.82	87.89 ± 7.83
p	<0.05	<0.05	<0.05	<0.05

3 Discussion

Visual fatigue syndrome is a common ophthalmic disorder in which patients experience eye congestion, blurred vision, and impaired vision. As the condition worsens, the patient's vision impairment worsens, with irreversible developmental outcomes [14]. Prevention is the main means of clinical treatment for visual fatigue syndrome, which can alleviate eye discomfort, solve physical symptoms, and control the progression of the disease. However, patients have a fear of wasting time and the idea that they can solve problems by adjusting themselves during the intervention period, which affects the effectiveness of the intervention [15]. After evaluating the psychological status of patients with visual fatigue syndrome, this study found that the scores of somatization symptoms, anxiety, depression, and interpersonal sensitivity in patients with visual fatigue syndrome were higher than the domestic norm (P<0.05). Table 1 shows that patients with visual fatigue syndrome have psychological problems such as somatization symptoms, anxiety, depression, and interpersonal sensitivity. To address the physiological and psychological issues of patients with visual fatigue syndrome, guided and maintenance interventions are adopted. These interventions are specifically designed for patients with visual fatigue syndrome and are more targeted than conventional health education. The psychological intervention plan in this study covers cognitive intervention, psychological

intervention, and social family emotional support. Among them, cognitive intervention mainly guides patients to effectively improve their awareness of the disease and avoid panic emotions caused by insufficient disease cognition; Psychological intervention can alleviate negative emotions in patients by providing guidance and comfort, enabling them to actively cooperate with treatment with a positive attitude; Family emotional support can make patients feel more at ease and enhance their confidence in treatment by encouraging family members to show care and support to the patient and accompany them. From Tables 2 and 3, it can be seen that the SAS, SDS, and negative coping scores of patients after intervention were significantly reduced compared to before intervention. The positive coping and quality of life scores of patients were significantly increased compared to before intervention, with $P<0.05$. This indicates that psychological intervention can effectively improve the psychological status of patients with visual fatigue syndrome, enabling them to actively respond to diseases and treatments, and reduce the interference of psychological problems on their quality of life.

In summary, psychological disorders in patients with visual fatigue syndrome are a common problem. Patients often have psychological problems such as anxiety, depression, somatic symptoms, and sensitive interpersonal relationships. Providing psychological intervention to patients can effectively alleviate their negative emotions, encourage them to actively face the disease, and improve their quality of life.

Acknowledgments

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