

## ORIGINAL ARTICLE

Medicine Science 2021;10(4):1196-202

## The relationship of uveitis with stress and evaluation of anxiety level and the way of coping stress in uveitis patients

**Esra Porgali Zayman<sup>1</sup>, Birgul Cumurcu<sup>1</sup>, Tongabay Cumurcu<sup>2</sup>**<sup>1</sup>Inonu University, Faculty of Medicine, Department of Psychiatry, Malatya, Turkey<sup>2</sup>Inonu University, Faculty of Medicine, Department of Ophthalmology, Malatya, Turkey

Received 17 March 2021; Accepted 19 June 2021

Available online 25.11.2021 with doi: 10.5455/medscience.2021.03.089

Copyright@Author(s) - Available online at [www.medicinescience.org](http://www.medicinescience.org)

Content of this journal is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License.



### Abstract

In this study, it was aimed to investigate the relation of uveitis with stress and the level of anxiety and the way of coping stress in these patients. In this study, study universe consisted of 80 people having uveitis, and 80 people entering to the hospital with complaints of refractive error, having no other sight problem, being at the same age level were included as control group. Following their examination at clinic, semi-constructed sociodemographic verse form was filled in the psychiatry clinic. Patients were taken to the psychiatric interview in accordance with DSM-5 diagnosis criteria. Afterward Hamilton Rating Scale for Depression (HAM-D), Hamilton Rating Scales for Anxiety (HAM-A), State-Trait Anxiety Investigation (STAI-I, STAI-II), and Coping Stress Scale (CSS) were applied. Uveitis patient group's scores of HAM-D, HAM-A (HAM-A Total, HAM-A Psychic, HAM-A Somatic, STAI-1 and STAI-2 scales mean scores were naturally higher than control group's scores ( $p < 0.05$ ). After the last clinic interview, while 72.5% of patient group were considering reason of last attack as stress, 27.5% of patients told that there was no connection between last attack of uveitis and stress. Whereas mean scores of helpless and submissive approach for coping with stress in the patient group were considerably found higher than control group, mean scores of optimistic approach in the control group were naturally higher than patient group ( $p < 0.05$ ). We have found that uveitis patients' depression and anxiety levels are considerably high that they have helpless and submissive approach for coping with stress. In the examination and treatment processes, considering psychiatric aspect of uveitis patients will be more helpful for optimal treatment and care.

**Keywords:** Uveitis, stress, anxiety, the way of coping stress

### Introduction

Uveitis is an intraocular inflammation, which affects primarily the uveal tissues (i.e. iris, ciliary body, and choroid); however, it also affects the surrounding tissues (i.e. vitreous, retina, optic nerve) threatening vision. Aside from the infectious and autoimmune mechanisms, the data on the pathogenesis of the disease are still limited in our present day. A number of changes caused by the inflammation in the eye tissues can affect vision, and result in a permanent decrease in vision level [1].

Vision is an important way of acquiring knowledge about the environment in humans. In humans, approximately 40% of the sensory data are visual, and processing these visual data makes

up approximately 50% of the cerebral cortex activity [2]. For this reason, although vision loss or the related threat varies among individuals, it can cause intense stress for many patients, and make it difficult to cope with this stress.

Stress is an alarm situation emerging involuntarily with the threat and force on the physical and spiritual boundaries of the organism [3]. Although the physical responses of individuals given to stress pass through the same steps, the events vary at a great deal depending on individual conditions, such as personality and environment at psychological level. Depending on such differences, the style of coping with stress of each individual is also different. Symptoms at behavioral level, anxiety, and depression occur in individuals who are inadequate to cope [4]. Also, the loss of the health of the person and with the necessity to endure the limitations of the disease become an element of stress and can cause increasing depression in people with chronic conditions [5]. In this respect, anxiety and depression are the most generalize psychiatric disorders accompanying physical diseases. It is already known that these psychiatric disorders not only impair the patient's adaptation and quality of life, but also affect the progression of the

\*Corresponding Author: Esra Porgali Zayman, Inonu University, Faculty of Medicine, Department of Psychiatry, Malatya, Turkey  
E-mail: [esra\\_porgali@hotmail.com](mailto:esra_porgali@hotmail.com)

disease, the response of the person to treatment, the complications, and the life expectancy of the patient [4, 6].

When studies, which examine the relations between stress and uveitis, were examined, inconsistent findings were found. It is difficult to compare these studies reliably because of the heterogeneity in the pathogenesis and etiology of uveitis, and the difference in the evaluation methods [7-10].

When past studies are examined, it is understood that different aspects of stress have been examined. In this study, uveitis patients were directly asked about the relationship between their disease and stress, and also STAI-1 and STAI-2 scales were used to evaluate anxiety, which is one of the components of the term stress. However, in this study, unlike other studies, the styles of coping with stress and stress were also evaluated.

The eye, which is the organ responsible for vision, constitutes an important part of the perception of the outside world in humans. Some symptoms and complications may occur as a result of uveitis attacks. The purpose of the present study was to elucidate the psychiatric diseases, which may occur when people face this disease, and to understand the coping mechanisms used in relation to these diseases.

## Materials and Methods

The present study was conducted with 80 patients (46 female, 34 male), who agreed to participate in the study, who were followed-up with the diagnosis of uveitis in the inactive period between 09.10.2013 and 09.01.2014 in Uvea Clinic of Inonu University, Turgut Özal Medical Center; and 80 patients (48 female, 32 male), who admitted for eyeglass examination only, who did not have any other eye diseases, who matched the patient group in terms of age and gender, were included as the Control Group. People who did not have additional medical diseases and did not take medication were included in the study. Serious medical diseases, epilepsy, history of head traumas causing loss of consciousness, alcohol and other substance addictions (excluding smoking), and conditions that might affect results, such as use of hormone replacement therapy in the past six months, were identified as exclusion criteria. Of the patients contacted, 2 male patients were excluded from the study due to head trauma and a history of neurological disease.

Patients and participants in the control group were sent to the psychiatry clinic after detailed eye examinations were performed by an ophthalmologist (visual acuity, biomicroscopic examination, gonioscopy, eye pressure measurement, funduscopy). A semi-structured psychiatric interview was conducted based on DSM-V diagnostic criteria by filling out a sociodemographic information form to the patient and control groups by a psychiatrist.

Afterwards, Hamilton Depression Scale (HAM-D), Hamilton Anxiety Scale (HAM-A), 20 State and Trait Anxiety Inventory (STAI-I, STAI-II) Coping Stress Scale (CSS) were applied to the patient and control groups. None of the individuals who were included in the study had history of head traumas, major medical or endocrine disorders, neurological diseases, or lifelong alcohol and/or substance abuse. The study was conducted in line with Helsinki Declaration, and was approved by Malatya Clinical Research Ethics Committee (Protocol no. 2013/153 on 09-10-2013). All

participants were informed about the study protocol in advance, and their written informed consents were received.

## The Scales Used

### Sociodemographic data form

This form was developed by the researchers, and included problems investigating the age, gender, marital status, education level, working status, residence information, and family structure of the patients. Under the Eye Findings heading, affected eye (right eye, left eye, both eye), right eye visual acuity, left eye visual acuity, right eye pressure, left eye pressure, and the complications during the follow-ups were evaluated.

### Hamilton Depression Scale (HAM-D)

This scale was developed by M. Hamilton and B. W. Williams, who structured it under his supervision in 1978 [11-13]. It measures the depression level and the severity changes in patients facilitating follow-ups during treatment. It is applied by the clinician, and contains 17 questions. Each item is scored between "0" and "3", and the maximum score is 51. The evaluation according to HAM-D is made as follows, 0-13 no depression, 14-27 mild depression, 28-41 moderate depression, 42-53 severe depression [14]. The validity and reliability study of the scale was conducted for Turkish culture by Akdemir et al. in 1996. Cronbach alpha value is 0.75 [15].

### Hamilton Anxiety Scale (HAM-A)

It was developed by Hamilton in 1959 [16] to measure the changes in severity by determining the level of anxiety and symptom distribution in subjects. It contains a total of 14 questions to determine spiritual and physical symptoms. The scores obtained from each item are added, and the total score is obtained. The score of each item varies between "0" and "4", and the total score of the scale varies between "0" and "56". It provides 5-Point Likert Type measurement. Total scores are calculated, and scores 0-5 indicate no anxiety, 6-14 indicate minor anxiety (slightly moderate), 15 points and above major anxiety (severe) [17, 18]. The Turkish validity and reliability study was conducted by Yazıcı et al. Cronbach alpha value is between 0.94 and 0.95 [19].

### State and Trait Anxiety Inventory (STAI-I, STAI-II)

The reliability coefficients determined with alpha correlations in the Turkish validity and reliability study of the scale, which was originally developed by Spielberger, Gorsuch, Lushene and Jacobs (1983), are between 0.83 and 0.87 for the Trait Anxiety Scale; and between 0.94 and 0.96 for the State Anxiety Scale [20,21]. The Inventory measures state and trait anxiety levels as a 4-Point Likert style self-notification scale including 2 separate scales with 40 items, each of which consists of 20 items. High scores refer to high anxiety level [20]. The Cronbach's alpha value of the scale varies between 0.86 and 0.95 [21].

### Coping Stress Scale (CSS)

The scale was created based on the Ways of Coping Inventory, which was originally created by Folkman and Lazarus in 1980, and is used to determine the styles used to cope with stress by the individual [22]. The adaptation of the scale into Turkish was

conducted by Şahin and Durak in 1995 [23]. In the reliability study of the Turkish version of the CSSS, The Cronbach's alpha value calculated for the subscale is 0.80 for the Self-Confident Approach, 0.68 for the Optimistic Approach, 0.73 for Helpless Approach, 0.70 for Submissive Approach, and 0.47 for Seeking of Social Support [2].

### Analysis of study data

The data were evaluated with the “SPSS 17.0” Program. Descriptive data related to the quantitative variables are given as the mean  $\pm$  standard deviation (SD), while data related to the qualitative variables are given as a number (n) and percentage

(%). Chi-square test was used in the comparisons of qualitative variables. Independent sample t test was used in the comparisons of quantitative variables. The “Spearman Correlation Analysis” was used to determine the direction and level of the relations between continuous variables.  $P < 0.05$  was taken as the level of significance in the evaluations.

### Results

The socio-demographic data of the groups are given in Table 1. No statistically significant differences were detected between the Patient and Control Group in terms of age, gender, marital status, and socio-economic level ( $p > 0.05$ ).

**Table 1.** Socio-demographic characteristics of patient and control group

| Socio-demographic characteristics |          | Patient group<br>n (%) | Control group<br>n (%) | p value           |
|-----------------------------------|----------|------------------------|------------------------|-------------------|
| Gender                            | Male     | 46 (57.5%)             | 48 (60%)               | 0.74 <sup>a</sup> |
|                                   | Female   | 34 (42.5%)             | 32 (40%)               |                   |
| Age (Year)<br>(Mean $\pm$ SD)     |          | 37.84 $\pm$ 12.43      | 37.58 $\pm$ 13.17      | 0.89 <sup>b</sup> |
| Marital status                    | Married  | 62 (77.5%)             | 51 (63.75%)            | 0.05 <sup>a</sup> |
|                                   | Single   | 18 (22.5%)             | 29 (36.25%)            |                   |
| Socio-economic level              | Low      | 4 (5%)                 | 2 (2.5%)               | 0.06 <sup>a</sup> |
|                                   | Moderate | 52 (65%)               | 40 (50%)               |                   |
|                                   | High     | 24 (30%)               | 38 (47.5%)             |                   |

a = p value from chi-square test

b = p value from independent sample t test

Although 62 (77.5%) of the patients were diagnosed with DSM-5, 18 (22.5%) had no diagnosis of DSM-5. In the Control Group, 15 (18.8%) had DSM-5 diagnosis, and 65 (81.2%) had no DSM-5 diagnosis. When the presence of DSM diagnosis was compared for Patient and Control Group, the number of Patients diagnosed according to DSM-5 was statistically higher than in Control Group ( $p = 0.001$ ). When DSM-5 diagnoses were evaluated separately, the percentage of the Patient Group with major depression disorder, generalize anxiety disorder, adjustment disorder, and tobacco use disorder was statistically higher than in the Control Group ( $p = 0.001$ ,  $p = 0.029$ ,  $p = 0.029$ ,  $p = 0.01$ , respectively). No statistically significant differences were detected when the percentage of those with alcohol use disorder was compared between Patient and Control Group ( $p = 0.63$ ).

Patient Group was asked if the disease and the final attack were related to stress. A total of 72.5% ( $n = 58$ ) of patients reported that they considered that the last attack was related to stress, and 27.5% ( $n = 22$ ) said that they considered the last attack was not related to stress. A total of 73.8% ( $n = 59$ ) of patients reported that they considered that the onset of the disease was related to stress, and 26.2% ( $n = 21$ ) said that the disease was not related to stress (Table 2).

The mean scores of the scale, which were used to determine the severity of disease in Patient Group were; HDO=12.76 $\pm$ 5.93, HAO=14.16 $\pm$ 7.32, HAO psychic=6.70 $\pm$ 3.58, HAO somatic=7.53 $\pm$ 4.64, STAI 1=38.01 $\pm$ 11.17, and STAI 2=56

43.93 $\pm$ 9.50. The same scores in healthy voluntary Control Group were; HDO=6.67 $\pm$ 4.39, HAO=4.85 $\pm$ 3.28, HAO psychic=6.33 $\pm$ 3.88, HAO somatic=3.28 $\pm$ 2.31, STAI 1=32.95 $\pm$ 6.95 and STAI 2=35.50 $\pm$ 6.85. Statistically significant differences were detected between HDO, HAO, HAO psychic, HAO somatic, STAI 1 and STAI 2 Scale of the Patient Group and healthy volunteering Control Group. Although statistically significant differences were detected between Patient Group and healthy Control Group in Self-Confident Approach, Helpless Approach, Submissive Approach, no statistically significant differences were detected in Optimistic Approach and Seeking of Social Support subscales between Patient Group and the healthy voluntary Control Group (Table 4).

When the mean scale scores of stress coping styles of patient group were compared in terms of gender, the mean sub-scale scores in Optimistic Approach were higher in male patients compared to female patients at statistically significant levels ( $p = 0.016$ ). However, no statistically significant differences were detected between the genders in terms of Self-Confident Approach, Helpless Approach, Submissive Approach, and Seeking of Social Support, which are other coping styles ( $p = 0.257$ ,  $p = 0.682$ ,  $p = 0.529$ ,  $p = 0.579$ , respectively).

The relations between STAI-1 and STAI-2 scores of Patient Group and stress coping styles subscales is given in Table 6. As seen in Table 6, a negative relation was detected between STAI-1 and STAI-2 scores and Helpless Approach scores. A positive relation was detected between STAI-2 and Self-Confident Approach.

**Table 2.** Distribution of the patient and control group according to DSM-V diagnosis criteria

|                                                          |     | Patient Group<br>(n = %) | Control Group<br>(n = %) | p value |
|----------------------------------------------------------|-----|--------------------------|--------------------------|---------|
| Presence of DSM-5 diagnosis                              | Yes | 62(77.5%)                | 15(18.8%)                | <0.01   |
|                                                          | No  | 18(22.5)                 | 65(81.2%)                |         |
| DSM-5 DIAGNOSES                                          |     |                          |                          |         |
| Major Depression Disorder                                | Yes | 20(%25)                  | 3(%3.8)                  | <0.01   |
|                                                          | No  | 60(%75)                  | 77(%96.2)                |         |
| Generalize Anxiety Disorder                              | Yes | 9(11.3%)                 | 2(2.5%)                  | 0.29    |
|                                                          | No  | 71(88.7%)                | 78(97.5%)                |         |
| Adjustment Disorders                                     | Yes | 9(11.3%)                 | 2(2.5%)                  | 0.29    |
|                                                          | No  | 71(88.7%)                | 78(97.5%)                |         |
| Tobacco Use Disorder                                     | Yes | 16(20%)                  | 15(6.3%)                 | 0.01    |
|                                                          | No  | 64(80%)                  | 75(93.7%)                |         |
| Alcohol Use Disorder                                     | Yes | 4(5%)                    | 3(3.8%)                  | 0.63    |
|                                                          | No  | 76(95%)                  | 77(96.3%)                |         |
| Somatoform Disorder                                      | Yes | 3(3.8%)                  | 0                        | 0.80    |
|                                                          | No  | 77(96.3%)                | 80                       |         |
| Bipolar Affective Disorder                               | Yes | 1(1.3%)                  | 0                        | 0.31    |
|                                                          | No  | 79(98.7%)                | 80                       |         |
| p values from chi-square test<br>Bold indicated p < 0.05 |     |                          |                          |         |

**Table 3.** Relation of stress with the disease and last attack

|                                                |            |
|------------------------------------------------|------------|
| <b>Relation of stress with the last attack</b> |            |
| <b>Yes</b>                                     | 58 (72.5%) |
| <b>No</b>                                      | 22 (27.5%) |
| <b>Relation of stress with the disease</b>     |            |
| <b>Yes</b>                                     | 59 (73.8%) |
| <b>No</b>                                      | 21 (26.2%) |

**Table 4.** Comparison of scale values of the patient and control group

|                          | Patient Group<br>Mean ± SD | Control Group<br>Mean ± SD | p value |
|--------------------------|----------------------------|----------------------------|---------|
| HAM-D                    | 12.76±5.93                 | 6.67±4.39                  | P=0.001 |
| HAM-A                    | 14.16±7.32                 | 4.85±3.28                  |         |
| HAM-A Psychic            | 6.70±3.58                  | 6.33±3.88                  |         |
| HAM-A Somatic            | 7.53±4.64                  | 3.28±2.31                  |         |
| STAI-1                   | 38.01±11.17                | 32.95±6.95                 | 0.001   |
| STAI-2                   | 43.93±9.50                 | 35.50±6.85                 |         |
| CSSS                     |                            |                            |         |
| Self-Confident Approach  | 14.26±2.77                 | 15.13±2.47                 | 0.023   |
| Optimistic Approach      | 9.96±2.25                  | 9.87±2.40                  | 0.581   |
| Helpless Approach        | 11.78±4.30                 | 8.31±3.02                  | 0.001   |
| Submissive Approach      | 8.68±2.65                  | 5.68±1.99                  | 0.001   |
| Seeking of Social Supper | 7.10±2.27                  | 7.22±1.61                  | 0.742   |

p values from independent sample t test  
Bold indicated p < 0.05

**Table 5.** Comparison of mean scores of subscales of Coping Stress Scale (CSS) according to gender in patient group

|                                  | Male (n=34) | Female (n=46) | p     |
|----------------------------------|-------------|---------------|-------|
| <b>Self-Confident Approach</b>   | 14.82±2.36  | 13.84±2.99    | 0.257 |
| <b>Optimistic Approach</b>       | 10.61±2.26  | 9.47±2.13     | 0.016 |
| <b>Helpless Approach</b>         | 11.64±4.38  | 11.89±4.29    | 0.682 |
| <b>Submissive Approach</b>       | 8.47±2.68   | 8.84±2.64     | 0.529 |
| <b>Seeking of Social Support</b> | 6.97±2.02   | 7.19±2.46     | 0.579 |

p values from independent sample t test

Bold indicated p &lt; 0.05

**Table 6.** Relation between subscales of coping with Stress Styles Scale (CSSS) and STAI-1 and STAI-2 scores in patient group

|               | Self-Confident Approach | Optimistic Approach | Helpless Approach | Submissive Approach | Seeking of Social Support |
|---------------|-------------------------|---------------------|-------------------|---------------------|---------------------------|
| <b>STAI-1</b> | <b>r</b>                | -0.066              | -0.009            | 0.232               | 0.100                     |
|               | <b>p</b>                | 0.559               | 0.940             | 0.038               | 0.379                     |
| <b>STAI-2</b> | <b>r</b>                | -0.267              | -0.100            | 0.563               | 0.066                     |
|               | <b>p</b>                | 0.017               | 0.377             | 0.000               | 0.558                     |

p values from spearmen correlation analyses

Bold indicated p &lt; 0.05

## Discussion

The present study was conducted with 80 patients, who were followed-up and treated in Inonu University, Ophthalmology Uvea Clinic, and with 80 healthy Control Group participants, who matched patients in terms of age and gender. This study is the first to analyze the relationship between stress, anxiety, and coping styles of uveitis, an important vision-threatening disease. In the present study, the fact that there were no statistically significant differences between Patient Group and Control Group in terms of age, gender, socioeconomic level, marital status, and educational status ( $p>0.05$ ) is important in showing that the patient and voluntary healthy Control Group were had homogeneous distribution.

Participants were evaluated with psychiatric interviews in line with DSM-5. After the clinical interviews, 20 people (25%) from the 80-people patient group were diagnosed with major depression. This is considerably higher than the 10% rate in general population [24].

In studies which examined the relations between cataract, senile macular degeneration, Behcet's Disease, and depression, which progress with vision loss among chronic eye diseases, depression was high in these diseases [25-27]. A present depression may develop because of a chronic physical disorder or as a result of vision loss that limits the daily life of a person [28, 29].

Watson and Clark reported that the physiological condition, which overlaps with depression, and which is almost the closest to it, is anxiety, and depression is often associated with anxiety [30]. In this study, patients' depression levels were examined with anxiety levels. It was observed that the number of patients who were diagnosed with anxiety disorder after psychiatric interview in line with DSM-5 diagnostic criteria was statistically higher than in Control Group.

HAM-D and HAM-A scales were used to determine the depression and anxiety levels of Patient Group and voluntary and healthy Control Group. These scales are based on structured clinical interviews, and are evaluated by clinicians. This increased the reliability of the study [31-33].

In the present study, the mean HAM-D, HAM-A Total, HAM-A Psychic and HAM-A Somatic score was statistically higher in Patient Group when compared to Control Group. In previous studies conducted on glaucoma, a chronic eye disease, in the literature, similarly, mean anxiety scores in were higher Patient Group than in Control Group [34, 35].

Patients reported that uveitis attacks started after or during a psychological effect, which gave rise to a negative mood, which suggests that psychological stress may be a triggering factor for uveitis attack. In the present study, during the interviews with the patient group, patients were asked if uveitis and attacks were related to stress. In this regard, 73.8% of the patient group participants reported that the disease was related to stress, and 72.5% reported that the recent attack was related to stress. In another previous interview-based study, unlike our results, only approximately 38% of the participants reported an association between stress and uveitis recurrence [36]. However, it was also interpreted that asking about stressful events in the context of recurrence of a disease may have reported more stress than in a study. STAI-1 and STAI-2 scales were used to determine the level of anxiety in patients and healthy volunteer control group. The STAI used in this study is not a specific stress assessment tool, but measures anxiety only as a component of stress [21]. The mean score of STAI-1 and STAI-2 scales was statistically higher in Patient Group than in healthy voluntary Control Group in this study. In another study that investigated stress and disease recurrence in patients who were diagnosed with idiopathic acute anterior uveitis using the STAI scale, no statistically significant association was reported [9]. However, Control Group consisted of healthy volunteers

who did not have any eye diseases in our study; however, the Control Group of this above-mentioned study consisted of patients with corneal foreign object, conjunctivitis, and contact lens-related diseases. However, in another study that was conducted on glaucoma found that the State and Trait anxiety scores of the study group were higher than the control group, which is similar to our own study [37]. According to the data obtained as a result of another study that used Modified Life Inventory, it was determined that there was a relation between uveitis recurrence and stressful episode in the 6 months before the onset of symptoms [35].

Stress is a condition, which must be coped with; however, if coping strategies fail, it is inevitable that psychological health deteriorates, and psychopathological symptoms appear [38]. It was found in a 2005 study conducted by Franke et al. with 51 uveitis patients who had various forms of uveitis that uveitis patients used weaker coping mechanisms [39]. In another study conducted in 2011 by Maca et al. that took into account gender differences in HLA-B27-related patients it was found that both genders used Cognitive Avoidance to cope with their disease, and male HLA-B27 patients used negative coping mechanisms more [8].

In the present study, the methods of coping with stress were evaluated by comparing the Patient Group and Control Group (Self-Confident Approach-SCA, Optimistic Approach-OA, Helpless Approach-HA, Submissive Approach-SA, and Seeking of Social Support-SSS). Although Patient Group used helpless and submissive approaches, which are ineffective regarding emotions, it was noteworthy that Control Group used the Self-Confident Approach, which is one of the effective approaches for problem solving (Self-Confident, Optimistic Approach, and Seeking of Social Support). When Patient Group was compared according to gender, it was found that male patients preferred the Optimistic Approach more than female patients; however, they used other coping styles almost equally. This difference seen in women and men can be explained as women are exposed to more stress factors in daily life and they tend to perceive events more negatively and negatively. In the study conducted by Poltavski and Ferraro in 2003, it was shown that women perceive the same events as more stressful than men and are more affected. [40].

In case a person faces a problem and interprets it as “threat, danger, or loss”, s/he will begin to experience stress responses, and the tension and anxiety will continue to increase until problems are resolved. If the strategies used always to reach solutions do not yield results, the resulting feeling of helplessness will make it even more difficult to find new solutions. As a result, the problem begins to seem unsolvable, and anxiety or helplessness continues to increase, and make the condition become more difficult [41]. In the present study, it was concluded that as the mean scores received in STAI State (STAI 1) and STAI Trait (STAI 2), which showed the anxiety levels in the patient group, increased, the use of CY style use increased, and SCA style use decreased as the mean STAI Trait (STAI 2) scores increased. As a result, it can be speculated that those who had high anxiety scores in uveitis patient group used the CY style and SSS style more, and use the SCA style less. In other words, according to this outcome of our study, we can argue that people with uveitis disease use more emotion-oriented coping styles when they face stress, which is away from the attempt to solve the problem.

There are some limitations, which affect the results of our study. Firstly, the fact that the mean age of the patients was relatively young may have affected the frequency and distribution of psychiatric problems, which did not yet emerge. However, the sample group should be selected wider with more participants to achieve more accurate outcomes for uveitis patients. When we determined our Study Group, the heterogeneity of uveitis was ignored in terms of pathological characteristics and etiology, and no specific group was created. Since the psychiatric evaluation was cross-sectional, we believe that longitudinal studies will be more beneficial.

Since the sample in this study was selected only from individuals who applied to the health center in Malatya province, it may be necessary to repeat the study with individuals with different socio-cultural characteristics and to compare the results in different regions.

As a conclusion, we believe that evaluating and supporting uveitis patients in terms of psychiatric symptoms during the follow-ups and treatment processes will affect the quality of life and prognosis of the patients positively.

#### Conflict of interests

*The authors declare that they have no competing interests.*

#### Financial Disclosure

*All authors declare no financial support.*

#### Ethical approval

*The study was conducted in line with Helsinki Declaration, and was approved by Malatya Clinical Research Ethics Committee (Protocol no. 2013/153 on 09-10-2013).*

#### References

1. Smith R, Baarsma GS, de Vries J. Classification of 750 consecutive uveitis patients in the Rotterdam Eye Hospital. *Int Ophthalmol*. 1993;17:71-5.
2. Dowling JE, Dowling JL. *Vision: How it works and what can go wrong*. The MIT Press. 2016.
3. Baltas Z, Baltas A. “Stress and Ways of Coping”. 29th Edition. Istanbul, Remzi Bookstore. 2012;26-8.
4. Kayahan M, Sertbas G. The Relationship Between Anxiety-Depression Levels and Stress Coping Styles in Hospitalized Patients in Internal and Surgical Clinics. *Anatolian J Psychiatry*. 2007;8:13-120.
5. Mete H. Chronic Disease and Depression. *J Clin Psychiatry*. 2008;11:3-18.
6. Atacanli MF, Dilbaz N. Chronic obstructive pulmonary disease and depression. *Clinical Psychiatry*. 2001;4:147-153.
7. Carrim ZI, Ahmed TY, Taguri AH. The relationship between stress and acute anterior uveitis. *Acta Ophthalmol Scand*. 2006;84:795-8.
8. Maca SM, Schiesser AW, Sobala A, et al. Distress, depression and coping in HLA-B27-associated anterior uveitis with focus on gender differences. *Br J Ophthalmol*. 2011;95:699-704
9. Mulholland B, Marks M, Lightman SL. Anterior uveitis and its relation to stress. *Br J Ophthalmol*. 2000 84:1121-4.
10. Secchi AG, Magni G, Tognon MS, et al. A psychosomatic approach to idiopathic recurrences of anterior uveitis. *Am J Ophthalmol*. 1987;104:174-8.
11. Hamilton M. A rating scale for depression. *J Neurol Neurosurg Psychiatry*. 1960;23:56-62.
12. Altındağ Ö, Altındağ A, Soran N, Tabur H. Disability and Depression in Patients with Rheumatoid Arthritis and Osteoarthritis. *Bulletin Clin Psychopharmacol*. 2007;17:24-29.
13. Williams JB. Standardizing the Hamilton Depression Rating Scale: Past, present, and future. *Eur Arch Psychiatry Clin Neurosci*. 2001;251 Suppl 2:II6-12.

14. Acik Y, Gungor L, Kuloglu M, et al. The Frequency of Depression Symptoms and Affecting Factors in Middle and Elderly Women. *O.M.U. Type Magazine*. 2003;20:10-26.
15. Akdemir A, Örsel SB, Dağ İ, et al. The validity, reliability and clinical use of the Hamilton depression rating scale. *3P magazine*. 1996;4:251-9.
16. Hamilton M. The assessment of anxiety states by rating. *Br J Med Psychol*. 1959;32:50-5.
17. Aksu G, Hocaoglu C. investigation of alexithymia, anxiety, anxiety and depression levels in a group of patients who were taken to radiological examination with complaints of mastalgia. *Clin Psychiatry*. 2004;7:95-102.
18. Turgut GE, Yuksel BC, Polat E, et al. Factors affecting anxiety in women presenting with breast complaints. *J Breast Health*. 2009;5:92-7.
19. Yazici MK, Demir B, Tanriverdi N, Karaoğlu E, Yolaç P. Hamilton Anxiety Rating Scale, inter-rater reliability and validity study. *Turkish Journal of Psychiatry*. 1998;9:114-7.
20. Öner N, The Validity of the State and Trait Anxiety Inventory in Turkish Society, Published Doctoral Thesis, Ankara.
21. Spielberger CD, Gorsuch RC, Lushene RE, et al. *Manual for the State-Trait Anxiety Inventory*. Palo Alto (CA): Consulting Psychologists Press; 1983.
22. Folkman S, Lazarus R. An analysis of coping in a middle-aged community sample. *J Health Soc Behav*. 1980;21:219-39.
23. Şahin NH, Durak, A. Stress Coping Styles Scale: Adaptation for University Students. *Turkish J Psychol*. 1995;10:56-73.
24. Lustman PJ, Griffith LS, Clouse RE, et al. Psychiatric illness in diabetes mellitus. Relationship to symptoms and glucose control. *J Nerv Ment Dis*. 1986;174:736-42.
25. Mc Gwin G Jr, Li J, McNeal S, et al. The impact of cataract surgery on depression among older adults. *Ophthalmic Epidemiol*. 2003;10:303-13.
26. Brody BL, Gamst AC, Williams RA, et al. Depression, visual acuity, comorbidity, and disability associated with age-related macular degeneration. *Ophthalmology*. 2001;108:1893-900.
27. Karlidag R, Unal S, Evereklioglu C, et al. Stressful life events, anxiety, depression and coping mechanism in patients with Behcet's disease. *J Eur Acad Dermatol Venereol*. 2003;17:670-5.
28. Dimatteo MR, Lepper HS, Croghan TW. Depression is a risk factor for noncompliance with medical treatment: Meta-analysis of the effects of anxiety and depression on patient adherence. *Arch Intern Med*. 2000;160:2101-7.
29. Katon WJ. Clinical and health services relationships between major depression, depressive symptoms, and general medical illness. *Biol Psychiatry*. 2003;54:216-26.
30. Watson D, Weber K, Assenheimer JS, et al. Testing a tripartite model: I. Evaluating the convergent and discriminant validity of anxiety and depression symptom scales. *J Abnorm Psychol*. 1995;104:3-14.
31. Williams BW. A structured interview guide for Hamilton Depression Rating Scale. *Arch. Gen Psychiatry*. 1988;45:742-7.
32. Potts MK, Daniels M, Burnam A, et al. A structured interview version of the Hamilton Depression Rating Scale: Evidence of reliability and versatility of administration. *J Psychiatr Res*. 1990;24:335-50.
33. Kessler RC, Chiu WT, Demler O, et al. Prevalence, severity and comorbidity of 12-month DSM-4 disorders in the National Comorbidity Survey Replication. *Arch. Gen. Psychiatry*. 2005;62:617-7.
34. Erb C, Batra A, Brömer A, et al. Psychiatric manifestations in patients with primary open-angle glaucoma. *Ophthalmology*. 1993;90:635-9.
35. Kumar A, Nena HV, Thakur V. Stress and uveitis. *Ann Ophthalmol*. 1981;13:1077-80.
36. Sen DK. Endogenous uveitis in relation to stress – a clinical study. *Eye Ear Nose Throat Monthly*. 1971;50:108-10.
37. Çetinkaya S, Özeç Vural A, Özdemir D, et al. Attitudes of coping with glaucoma patients' depression and anxiety symptom levels. *Cumhuriyet Med J*. 2013;35:39-50.
38. Aysan F. Life Satisfaction, Strategies for Coping with Stress and Negative Automatic Thoughts of School Counselors; İzmir Province Sample, XIII. National Educational Sciences Congress, 6-9 July 2004 İnönü University, Faculty of Education, Malatya.
39. Franke GH, Schutte E, Heiligenhaus A. Rehabilitation e psychological aspects of uveitis. *Psychother Psychosom Med Psychol*. 2005;55:65-71.
40. Poltavski D, Ferraro FR. Stress and illness in american and Russian college students. *Personality and Individual Differences*. 2003;34:971-82.
41. Koivumaa-Honkanen H, Honkanen R, Viinamäki H et al. Life satisfaction and suicide: A 20-year follow-up study. *Am J Psychiatry*. 2001;158:433-9.