Mental health is a growing concern in the United States, with 90% of Americans viewing it as a crisis. As primary care providers, optometrists could be the first or only point of contact within the health care system for some patients. Therefore, we need to be able to recognize mental illness; understand the relationship between ocular conditions, mental illness, and the medications needed to treat it; and make appropriate referrals within the health care system. This article examines the role of optometrists as primary care providers in making these important connections for our patients.

OCULAR ISSUES ASSOCIATED WITH MENTAL HEALTH CONDITIONS

Anxiety and depression are the most common mental health-related conditions optometrists will encounter in primary practice, but it behooves us to familiarize ourselves with other common mental health conditions, including attention-deficit/hyperactivity disorder (ADHD), bipolar disorder, eating disorders, and schizophrenia.

According to the National Institute of Mental Health (NIMH), anxiety disorders include panic disorder, generalized anxiety disorder, agoraphobia, social anxiety disorder, post-traumatic stress disorder, obsessive-compulsive disorder, and separation anxiety disorder. These disorders can interfere with a patient’s daily activities, such as

THE INTERSECTION OF OPTOMETRY AND MENTAL ILLNESS

Understanding the connection between visual quality of life and mental health.

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as schoolwork, job performance, and relationships. About 19% of US adults have reported having an anxiety disorder in the past year. It has been noted that adolescents with anxiety perform differently than normal controls with anti-saccadic eye movements; however, more often anxiety is a psychiatric manifestation of significant ocular disease and not the other way around.

The NIMH defines depression as a period of at least 2 weeks with a depressed mood or loss of interest/pleasure in daily activities and a majority of the specified symptoms, including problems with sleep, eating, energy, concentration, or self worth. Depression occurs in 8.4% of the adult population and 17% of adolescents. As with anxiety, it has been noted that teens with depression have impaired anti-saccadic eye movements, but more often, depression is a psychiatric manifestation of an ocular disease.

ADHD is one of the most common mental health conditions seen during childhood and can continue through adulthood. Symptoms can include difficulty with focus and attention, difficulty controlling behavior, and hyperactivity. The prevalence of ADHD is 4.4% in US adults and 11% in US children. Several studies have shown an association between ADHD and convergence insufficiency.

Bipolar disorder, also referred to as manic-depressive disorder, involves dramatic shifts in mood and activity levels that affect our patients’ ability to carry out everyday tasks. Bipolar disorder affects 2.8% of the US adult population yearly. Previous studies have found retinal changes in patients with bipolar disorder, specifically a higher tortuosity index of retinal arterioles. In addition, the retinal ganglion cell layers were thinner in patients with bipolar disorder compared with healthy controls.

Eating disorders cause severe disturbances to a patient’s eating behaviors. Common eating disorders include binge eating disorder (BED), bulimia nervosa (BN), and anorexia nervosa (AN). BED involves episodes of binge eating and a feeling of loss of control. Patients with BED tend to be overweight or obese. Patients with BN go through episodes of binge eating followed by purging. These patients may fall in the normal range for weight, but they usually express unhappiness with their body image. AN is characterized by a persistent reduction in food intake and extremely low body weight. The prevalence of BED, BN, and AN among US adults are 1.2%, 0.3%, and 0.6%, respectively. Pseudotumor cerebri could result from BED or BN. Lagophthalmos, acute vision loss,
optic atrophy, vitamin deficiency, and Wernicke syndrome could all result from AN.5

Schizophrenia is characterized by disruptions in thought processes, perceptions, emotional responsiveness, and social interactions. Patients may lose contact with reality and experience a variety of symptoms, including hallucinations; delusions; and disorganized thinking, speech, and behavior. The prevalence of these disorders is between 0.25% and 0.65% for US adults.5 Patients with schizophrenia may present with visual deterioration and visual-perceptual changes early in the disease.6

ADVERSE OCULAR EVENTS FROM PSYCHOTROPIC MEDICATIONS

Many mental illnesses can be successfully treated with psychiatric medications, such as antipsychotics, tricyclic antidepressants, lithium, benzodiazepines, carbamazepine, topiramate, and selective serotonin reuptake inhibitors (SSRIs).7 However, the use of these medications may induce side effects, including ocular side effects, which can be divided into the categories below.

Eyelid and Keratoconjunctival Disorders

Disorders of the eyelid and the keratoconjunctiva (eg, abnormal pigmentation, corneal edema) are associated with the use of phenothiazines and lithium. Chlorpromazine can cause abnormal pigmentation of the eyelids, interpalpebral conjunctiva, and cornea. It can also cause corneal edema.7

Uveal Tract Disorders

Uveal tract disorders are mainly associated with tricyclic antidepressants (TCAs), typically antipsychotics, topiramate, and SSRIs. These medications can cause mydriasis, which is often transient, and can promote angle closure in patients who are at risk.7

Accommodation Interference

These issues are associated with TCAs and low-potency antipsychotics. TCAs cause transient blurred vision in about one-third of patients.7

Angle-Closure Glaucoma

Angle-closure glaucoma is associated with TCAs, low-potency antipsychotics, topiramate, and some SSRIs. Topiramate can lead to a reaction where parts of the lens and ciliary body are displaced resulting in angle-closure glaucoma.7

Cataract/Pigmentary Deposits in the Lens and Cornea

Cataracts can develop from long-term antipsychotic use, mainly from high doses of chlorpromazine and thioridazine, which cause lenticular opacities.7

Retinopathy

Retinopathy has been associated with high dosages of antipsychotics, mainly chlorpromazine and thioridazine. The frequency of retinal complications seems to be proportional to the amount of drug prescribed over time.7

Other Visual Problems

Other visual problems that may arise include ocular dystonias, eye movement disorders, and decreased color vision and contrast sensitivity. Ocular dystonias can occur with use of antipsychotics, carbamazepine, topiramate, and (rarely) SSRIs. Disturbance in eye movements can be seen with use of benzodiazepines, antiepileptic drugs, and lithium. Color vision and contrast sensitivity impairment have been associated with use of carbamazepine and lorazepam.7

EFFECTS OF OCULAR CONDITIONS ON MENTAL HEALTH

It is estimated that at least 2.2 billion people are visually impaired worldwide.8 Age-related vision loss is a primary cause of vision impairment, so this number is expected to rise with increases in average lifespan. Data show rates of depression and anxiety are elevated among people with visual impairments.9 Additionally, those with low vision or blindness are at least twice as likely to develop depression compared with those without. Additionally, adolescents with vision impairments experienced symptoms of anxiety at a significantly higher rate compared with those without.9
Ocular conditions that have been shown to increase levels of depression and anxiety include age-related macular degeneration, glaucoma, retinitis pigmentosa, keratoconus, and Sjögren syndrome. An increased risk of suicide has also been documented in visually impaired populations. Suicidal ideation has been closely linked with visually impaired elderly adults and risk increases with the severity of impairment. The suicide of a meteorologist in December 2018, which was 2 months after her LASIK procedure, brought attention to the topic.

Patients with a binocular vision disorder (BVD) have been shown to have increased anxiety levels. The patient’s eye muscles send the brain two pictures that are in slightly different positions, and the brain tries to compensate, forcing the eye muscles to correct the misalignment, only temporarily, and the whole cycle starts over (Figures 1 and 2). This can happen due to a vertical or horizontal misalignment.

Because the alignment cycle reoccurs, the eye muscles begin to quiver, leading the brain to think there’s movement. Eventually, this affects the vestibular system, causing lightheadedness, dizziness, and other vision symptoms. When the brain receives these conflicting symptoms, it interprets the environment as unsafe. In this manner, BVD mimics the visual disturbances and eye strain caused by general anxiety.

Some patients experience BVD symptoms with distance vision, causing them anxiety when driving. Other patients experience BVD symptoms with near vision, which can cause anxiety when doing near work. Patients with BVD may withdraw from work, school, or social functions due to severe anxiety and panic attacks.

Because people with anxiety often experience visual disturbances and those with BVD often complain of anxiety, BVD can be a challenge to diagnose. Patients who complain of BVD symptoms are often diagnosed with anxiety and are medicated, which only exacerbates the problem because anxiety medications can cause visual disturbances. Small amounts of vertical or horizontal prism can greatly reduce these patients’ symptoms.

**STEPS TO TAKE**

Optometrists should ensure that their practice’s history forms inquire specifically about a patient’s mental health conditions and the medications they are taking. It is important to be aware of and prepared for any medication-induced adverse effects. Early prevention and intervention can help avoid any serious or potentially irreversible ocular toxicities.

Optometrists should also refer patients to optometrists who provide low vision services, occupational therapists, or support groups and offer education and other resources for those who are newly diagnosed with a sight-threatening disease (see Support Resources for Patients With Ocular Conditions). For patients with suspected BVD, if you don’t offer testing yourself, refer the patient to a neuro-visual optometrist for evaluation and treatment.

Finally, we should develop a two-way referral system with mental health practitioners in our community. Let them know the services you offer and how you can benefit their patients. Then communicate your desire to retain the care of those patients once their ancillary needs have been met. This keeps your patients happy and promotes healthy comanagement relationships with local practitioners in your area.

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