Social Anxiety Disorders and Psychopharmacology

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Abstract

This paper examines the role of psychopharmacology and the treatment of social anxiety disorders. The evolution of research surrounding social phobia is addressed as well as the symptoms of social anxiety, and the onset, development, and treatment options. Current studies and research from a psychopharmacological perspective is addressed including alternate solutions. An identification of the gaps in literature and areas for future research is addressed. This paper assesses a variety of components associated with the suffering that people with social anxiety disorders experience as well as an understanding of the treatments that are currently available.

Social Anxiety Disorders and Psychopharmacology

It is important to understand the relationship between generalized anxiety disorder, psychopharmacology, social anxiety, and supplemental alternative treatments. Psychopharmacology is considered to be the overlapping science of the biological organic causes to psychopathologies with psychological causes including the interaction of pharmacological substances on treatment progress (Schatzberg, Cole, & DeBattista, 2007). Psychopharmacology furthers the science of psychology by studying interactions of brain activity with psychotropics which is why this science is of importance to the field of health psychology and the advancement of the pathology of social anxiety disorders.

Generalized anxiety disorder (GAD) has long been associated with a psychic condition that often includes symptoms such as an increased “flight or fight mechanism” as well as an overall heightened sensitivity to environmental factors that could contribute to reactions of an abnormal nature (Hunt, 1999). Generalized anxiety occurs when a person finds themselves in a in a place of danger and a sense of fear and unease is apparent is not considered to be an example of social anxiety. However, when one person has an unrealistic fear reaction in a social situation and, to most, this situation is a normal, it may be plausible to look at this behavior as symptomatic to a social phobic disorder.

There is a need for an understanding of the development of social anxiety, the available psychopharmacological methods for treatment and the risks of psychotropic treatments. Additionally, there are opportunities for research in the

areas of holistic methods of treatment for social anxiety disorders such as nutritional and behavioral options that are investigated.

History of social anxiety

Historically, social anxiety was first identified and traced back to the middle ages in England in which nobles were afraid to walk amongst the masses of the poor vagrants because of fear of revolts or violent outbreaks (Hunt, 1999). In the middle of the nineteenth century social anxiety began to focus upon female nervousness (referred to as neurasthenia) because of the empowerment of women with the invention of birth control and perhaps a misunderstanding of social changes that were being led by females (Hunt, 1999). In the 1970s social anxiety was again defined by instances in Birmingham in which there was a fear of muggings by citizens of a lower class due to a convergence of activities which included racial prejudice and a fear of the younger generation by the older society. Social anxiety builds upon the premises of general anxiety disorder but the social context seems to be more of a trigger point reaction for the overall heightened “flight or fight” symptomology. Therefore, it could be concluded that social anxiety is an overreaction to common events or changes.

The definition and understanding of social anxiety continued to evolve from a scientific and research perspective in the psychological community as well as the arts community. Champigny (1951) noted in Modern Language Quarterly that the famous French poet Barnabooth was using social anxiety as underlying themes in his writings and Albrecht (1948) theorized in the Journal of Personality

that the famous author of the 1920-30s, Julian Green, was using social anxiety theories in his writing because Green admittedly suffered from anxiety disorders.

Saltz and Hoehn (1957) began to further social anxiety by moving away from just observatory experiences to examining research such as the Taylor-Spence theory of anxiety. This theory proposed that those who suffered from social anxiety would not perform as well on tasks in comparison to those who did not experience anxiety (Sarason, 1961). This research was furthered surrounding the effect anxiety has on intellectual tasks with a study by Heath (1965) who proposed that social anxiety was caused by rejection by the mother or father, hetero or homosexual relationships, or mother-son versus father-son aggressiveness. During this time those who did not have social anxiety were assumed to have received acceptance by others and have constructive work activities. Most of this research used measurements such as heart rate, feelings of worry, or uneasiness and the level of anxiety was often rated as being either facilitating or debilitating (Walsh, Engbretson, & O'Brien, 1968).

Research soon began to focus in more detail on the causes of social anxiety. Williams (1966) began conducting studies measuring the association of alcohol usage with social anxiety and Sears (1967) examined the way that those suffering from social anxiety reacted with peers when they were told they would be judged or measured by others. Watson and Friend (1968) developed the scales of social anxiety which are the Social Avoidance and Distress (SAD) scale and the Fear of Negative Evaluation (FNE) scale in 1968 which helped further research into areas such as avoidance responses and physiological responses

(Rehm & Martson, 1969). Storch, Brassard, and Masia-Warner (2003) noted that these measurements evolved into the Social Anxiety Scale for Adolescents (SAS-A), the Social Phobia Anxiety Inventory for Children (SPAI-C), and the Multidimensional Anxiety Scale for Children (MASC).

Definition of social anxiety

Social conditions still continue to evolve in western civilizations that push our definition of social anxiety to new levels (Conroy, 2007). However, the current definition of social anxiety has evolved from a group dynamic to an individual reaction. Today, some current examples of situations that could trigger social anxiety attacks would be instances in which the person believes that they are the center of attention regardless of the importance of the situation. This could vary from being a public speaker, introducing yourself as a student in class, or having to contribute to a meeting at work (SP/SPAA, 2007). These types of disorders may seem to be associated with Generalized Anxiety Disorder (GAD) but they are not. They are associated with social situations and often the person experiencing the anxiety is not affected by GAD.

Generalized anxiety disorder (GAD) often is hard to distinguish from panic disorder, common anxiety disorders, or social phobia because the symptoms are often similar and they often cross over between the disorders. Anxiety is often characterized as feelings of fear, whether real or perceived, and those suffering with GAD often find that they have chest pain, hyperventilation, tachycardia, dizziness, faintness, headaches, vomiting, anorexia, diarrhea, palpitations, and sexual dysfunctions as symptoms (Walley, 1994).

Similar to generalized anxiety disorder, social anxiety has many of the same symptoms but social anxiety is more focused on situations that occur in the public. For example, speaking in front of a group or being the center of attention at a party would cause the symptomology to present itself and therefore, this disorder is often referred to as "performance anxiety" (Schatzberg, Cole, & DeBattista, 2007*).* It may not be abnormal for an individual to present symptoms of anxiety if they are requested to speak in public; however, social anxious individual present severe anxiety often in situations such as having to speak in a social meeting (Hunt, 1999). This is the difference between having a reasonable fear versus having a neurotic anxiety.

Onset and development of social anxiety

Social anxiety can occur very early in life and symptoms of this psychopathology are not easily articulated by children. Adults are often asked how they would rate statements such as "I am afraid of being embarrassed socially" or "I avoid being the center of attention" to help identify their social anxiety but it is often not so easy for children or adolescents (Rosenthal, Jacobs, Marcus, & Katzman, 2007). Children often experience strong feelings of social anxiety or a concern for 'fitting in' that causes them to be unnecessarily cooperative or display conformist behavior when there is a fear of fitting in and this can escalate further in life (Pelusi, 2007).

Diagnosing social anxiety early rather than later in life is a preferable mechanism for treatment. Loukas, Paulos, and Robinson (2005) explained that young adolescents diagnosed with social anxiety disorder demonstrated an

inhibition in the development of interpersonal relationships and this was shown to result in an increase in depression and negative self-esteem as they aged. Additionally, these symptoms were more prevalent with females versus males and theories that suggest this is a result of the social acceptance of males demonstrating aggression when feeling social stress and the social disapproval when females demonstrate the same behavior when they feel social stress (Loukas, Paulos, & Robinson, 2005).

Untreated social anxiety

Social anxiety disorder is rarely acknowledged by the person suffering from the disorder and most often goes untreated (Modesto-Lowe & Kranzler, 1999). Those who suffer from social anxiety report feeling faint, trembling, dizziness, rapid heart rate, difficulty speaking and swallowing, and sweating and less that 20% of those suffering seek help from a professional with only 6% of those reporting the use of a psychotropic to treat their illness (Curtis, Kimball, & Stroup, 2004).

Social anxiety that is left untreated often results in self-medication often in the form of alcohol misuse. The relationship between alcohol, medication, and self-medication has long been accepted as clinical lore (Abrams & Wilson, 1979). However, research states that alcohol is known to cause frequent mood disorders, anxiety disorders, and antisocial personality disorders because of its use as a self-medication (Curtis, Kimball, & Stroup, 2004). Heavy drinking can worsen or ease symptomology which often leads to a cyclical behavior pattern

between social anxiety symptoms, alcohol consumption, withdrawal, and recurring social anxiety symptoms.

Specifically, over one-fifth of those who suffer from social anxiety use alcohol to reduce tension and alleviate their fears and this is considered to be an alcohol use disorder (AUD) associated with tension reduction theory (Book & Randall, 2002). Regardless of the lack of clinical or psychopharmacological evidence to support the reduction of anxious symptoms through the use of alcohol, patient's with social anxiety disorder often believe that alcohol does reduces symptomolgies (Tran, Anthenelli, Smith, Corcoran, & Rofey, 2004). In fact, those who suffer from anxiety disorders are more likely to use alcohol at an early age to help elevate the symptoms associated with social anxiety disorders and panic attacks (Modesto-Lowe & Kranzler, 1999). Regardless of efficacy of alcohol on the symptoms, approximately 20% of those suffering from social anxiety disorders and 15% of those who undergo alcohol treatment have both disorders (Book & Randall, 2002). AUD is a learned behavior used by those with social anxiety disorder as a coping mechanism.

Additionally, untreated social anxiety disorders often results in social withdrawal and avoidance behaviors. Depression, social impairment, and vocational impairment are common detrimental behaviors of untreated social anxiety (Katon & Roy-Byrne, 2007). This is often because of an internal behavioral belief or development, either consciously or unconsciously, that a personality deficiency exists and this results in the person's further isolation from social situations (Kendall & Roy-Byrne, 2007).

Current psychotropic treatments

In order to understand the risks and benefits associated with psychtropic treatments for social anxiety disorders the concepts of pharmacodynamics and pharmacokinetics must be addressed. The concept of pharmacodynamics can be compared to the manner in which a drug is administered and the effect of the administration process on the patient. This is the study of what a drug does to an organism. There is a great deal of variability associated with the manner in which a drug is absorbed by an individual because each patient is different and therefore, reactions and cellular responses will vary (Mandema, 1992). Some variables that have to be considered, when distributing medication to those suffering from social anxiety disorder include the excretion of the drug throughout the body, the level and speed of distribution of the substance, the absorption process from a cellular level, the tissue localization of the substance and the biotransformation resulting from the interaction with the drug (Anderson, 2005).

Further, pharmacokinetics is the study of what an organism does to a drug and the manner in which a drug is ingested. Neligan (1999) explained that pharmacokinetics look at the volume of distribution which is the quantity of drugs in the body divided by the amount of blood and the clearance which is how fast the drug is removed. The removal process includes a variety of systems. However, one of the better known systems that processes and distributes the products of medications after ingestion is the liver and digestive system. The liver works hard to digest and manage drugs that are transferred by the manner of molecular substances that attach themselves to fats (Pinel, 2004). These

systems are important to understand when psychotropics are recommended for the administration to those suffering from social anxiety.

Additionally, when treating social anxiety from a psychopharmacological perspective comorbidity most likely will have to be considered as well as the predisposition for alcohol misuse. With this in mind, the more common pharmacological treatments for social anxiety are phenelzine which is a monoamine oxidase inhibitor, clonazepam which is a benxodiazepine, and paroxetine which is a serotonin reuptaike inhibitor (Curtis, Kimball, & Stroup, 2004).

With the understanding of the complexities associated with social anxiety and the implications of the pharmacodynamics and pharmacokinetics with psychotropics is it also important to understand the effects that many additional disorders have on the onset of social anxiety prior to recommending a specific psychotropic. For example, when a person is diagnosed with disorders such as anemia, AIDS, Parkinson’s disease, influenza, or chronic pain, they may experience symptoms of panic, generalized anxiety disorder, social anxiety, or depression that may be better treated with social support networks and nutritional supplements rather than psychotropic drugs (Brannon & Feist, 2004). Therefore, a full understanding of a patient’s biological, psychological, and social support system should be fully assessed prior to administration of a psychotropic.

Upon receiving a full patient history a variety of psychotropics can be evaluated. Schatzbert, Cole, and DeBattista (2007) discussed that

benzodiazepines are used for short-term relief from GAD symptoms but that venlafazine, escitalopram, and paroxetine are longer-term FDA approved solutions. Various types of anti-anxiety medications have proven to be successful when the symptomology was focused on anxiety disorders rather than byproducts of illnesses or stress. Paroxetine, commonly known as Paxil, is usually administered in 20mg per day dosages for social anxiety disorders and has been shown to have high efficacy (Brown University, 2007). However, in a recent study clonazepam was proven to be most effective choice for social anxiety disorders in a randomized double-blind placebo trial with a 78.3% reduction in symptoms versus a 20% reduction in the placebo group (Curtis, Kimball, & Stroup, 2004).

A variety of pharmacological effects, indications, side effects, overdose opportunities, and drug interactions associated with psychotropics medications. For example, patients experiencing depression may have an increase in side effects so it is best to slowly manage the dosage of any psychotropic medication, especially while increasing the dosage level (Preston & Johnson, 2007).

SSRI's have low side effects and they are often used as antidepressants and also for the treatment of social anxiety disorders because of the low side effects and the potential ability to effectively manage depression (Grachev & Apkarian, 2000). However, there are reported side effects regarding sexual dysfunction and weight gain that can be challenging for the patient (Preston & Johnson, 2007). Additionally, there are high comorbity risks that can be fatal if

the patient is taking a MAOI with an SSRI such as paroxetine (Brown University, 2007).

There are a variety of uses and benefits of anxiolytic medications (benzodiazepines) for the treatment of anxiety disorders so it is very important to not only cautiously diagnoses the correct form of anxiety, but also to closely monitor patients to ensure they have received the adequate dose, correct duration of time to observe a behavioral change, and ensuring that the patient is compliant with the drug therapy (Preston & Johnson, 2007). Anxiolytic medications are proven to be helpful in treating not only social anxiety but also posttraumatic stress disorder, social phobia, obsessive compulsive disorder, and body dysmorphic disorders (Schatzberg, Cole, & DeBattista, 2007).

Benzodiazepines such as diazepam, clonazepam, or alprazolam are also very useful for treating social anxiety, panic disorder, and generalized anxiety with a minimal amount of side effects. Schatzbert, Cole, and DeBattista (2007) note the side effects usually are lethargy, sedation, withdrawal, or dependence without a great deal of risk for overdose. However, when a person withdraws from any of the aforementioned medications he or she should only do so under the direct observation of the physician and reduce the dosage only by 25% per week to minimize side effects.

Very often a phased approach to managing social anxiety is successful. A patient may want to start out with a benzodiazepine and later an SSRI may be added. It is important to monitor a patient upon the beginning of a SSRI

treatment as there are incidences of increased suicide rates in adolescents (Brown University, 2007). Once the SSRI has become effective the benzodiazepine can be discontinued. Overall, regardless of the severity of the anxiety disorder that a person suffers from, a focus must be upon ensuring the correct diagnosis has been made and that any other medical issues or other drugs being consumed are presented up front to the physician or psychologist (Preston & Johnson, 2007).

Pregnant women must be carefully assessed and monitored when they are being treated for social anxiety disorders. Pinel (2006) explained that three weeks after conception the zygote's nervous system has begun to develop in the form of a neural plate that are often referred to as the embryonic stem cells. Most all psychopharmacological medications pass through the blood-brain barrier. What this means is that any medications or drugs that the mother is taking during this time can be passed from the mother's blood stream to the unborn child which may result in mild behavioral developmental delays in the child at different phases in life all the way to catastrophic physical or mental disorders such as congenital abnormalities or Ebstein's anomaly (Schatzbert, Cole, and DeBattista, 2007, p. 552-553). SSRI's used in treating social anxiety disorders also present severe risks to the fetus such as ventricular and atrial septal defects (Brown University, 2007). Therefore, it is extremely important for a female patient planning to get pregnant as well as females with unplanned pregnancies to work with a team of experts including her psychotherapist, her

medical physician, and her family to assess the decision to either discontinue her medication or use an alternate medication.

Natural alternative solutions

The U.S. Food and Drug Administration (FDA) is the body that regulates and evalutates psychotropics to ensure safety including psychotropics used to treat social anxiety disorders (Schatzberg, Cole, & DeBattista, 2007). However, there is a huge market for unregulated herbal medications to treat these disorders that can be purchased over the counter or in herbal or natural grocery stores. As the herbal market is not regulated by the FDA, the efficacy of these suppliments can not be demonstrated efficently and there are also possible negative side effects or contraditions with additional herbal substances or psychotropics.

One such alternate solution is St. John's Wart, also known as Hypericum perforatum, which has been used throughout the centuries to treat depression and also used for anxiety disorders to calm the side effects of over analysis of thought processes associated with social anxiety. This herbal substance is usually administered in a dosage of 900-1800mg per day and can have side effects of gastrointestinal disorders, rash, or fatigue (Schatzberg, Cole, & DeBattista, 2007). St. John's Wart is usually administered in a pill format that contains the flowers, stems, and leaves of the plant (Balch & Balch, 1997).

An additional natural solution for social anxiety is the consumption of omega-3 fatty acids. Omega-3's are recommended to be administered at a

dosage of 9.6g per day and there may be side effects such as a fishy odor (as they often contain fish oil) or having gastrointestinal discomfort (Schatzberg, Cole, & DeBattista, 2007). Those suffering from social anxiety may want to gain the necessary omega-3 fatty acids supplements by eating a variety of fish that contain this fatty acid which includes mackerel, anchovies, salmon, herring, whitefish, shark, bass, or tuna (Hausman & Hurley, 1989).

Another over the counter supplement that is used to combat depression which is helpful for anxiety is DHEA (dehydroepiandrosterone) and this is usually administered in 50-450mg per day (Murray & Pizzorno, 1998). Saliva tests that measure depression have found that those suffering from this psychopathology often have elevated levels of cortisol and inadequate levels of dehydroepiandrosterone.

Kava (Piper methysticum) is a very popular over the counter medication that is used to treat anxiety and it is usually administered in 75-150mg dose which provides a calming effect. Side effects can include central nervous system depression or feelings and behaviors similar to intoxication (Schatzberg, Cole, & DeBattista, 2007). Kava is also considered to be a diuretic and long-term use can cause a yellowing of the skin, hair and nails (Eades, 2000). However, users often report significant reduction of anxiety after one week of consumption which is a relatively short time frame for those who have suffered from long-term social anxiety.

Valerian (Valeriana officinalis) is a supplement that is also helpful for those suffering from anxiety disorders and the average dosage of an extract of 300-600mg which is usually taken in a tea anywhere from one to three times a day (Schatzberg, Cole, & DeBattista, 2007). Valerian should not be taken with alcohol, antihistimines, or psychotropics due to the sedative properties and physicians need to be aware of AUD before recommending this supplement (Holford, 2005).

Folate and B vitamins are supplements that are often helpful for social anxiety. For those suffering from this psychopathologies a dosage of 500μg per day of folate and a dosage of 1,000-2,000μg of B_{12} are recommended. If these vitamins are taken in doses that are too high, side effects may include nausea, seizures, burning sensations, or contradictions with anticonvulsants, barbiturates, or estrogen (Schatzberg, Cole, & DeBattista, 2007). However, if a person is experiencing anxiety and inner tension it may be a sign of a deficiency of folate and the B vitamins so the dosage should be monitored and potentially increased (Holford, 2004).

S-Adenosylmethionine (SAMe) is considered to be helpful for depression and is taken in dosages ranging from 400-1600mg per day. Nausea is considered to be one of the side effects associated with SAMe (Schatzberg, Cole, & DeBattista, 2007). SAMe is associated with having a stimulatory effect on norepinephrine and serotonin in animal studies and may be associated with

the restoration of beta muscarinic receptors which help increase membrane fluidity (Williams, A. (2005).

Inositol is another natural supplement that considered to be helpful for depression and anxiety disorders and it is administered in dosages ranging from 6-12g per day. Similar to omega-3 fatty acids the side effects include gastrointestinal distress and a fishy odor (Schatzberg, Cole, & DeBattista, 2007). Inositol may help with the treatment of agorpahobia and panic attacks as well as anxiety as it is associated with increasing cerebrospinal fluids assisting in neurotransmission (Werbach, 1999).

Nutritional changes can also benefit those with social anxiety. For example, Balch and Balch (1997, p. 133) recommend that those suffering from anxiety, panic attacks, or social anxiety should avoid coffee, soda, black tea, large amounts of animal protein, sugar, or alcohol. Additionally, it is recommended that those suffering from anxiety should increase consumption of vitamin B complex, drink milk, increase intake of calcium, magnesium, phosphorus, potassium, and selenium (Werbach, 1999, p.70-79). It is also important to rule out any potential food allergies or reactive hypoglycemia before an overall nutritional change is initiated (Werbach, 1999, p.320-25).

Behavioral modification solutions

Many patients with social anxiety self-report or are diagnosed as suffering with irritability, excessive worrying, avoidance behaviors, and a disproportionate view in which they assess stressors as threats (McLoone, Hudson, & Rapee,

2006). For those who suffer from social anxiety or panic disorders many individuals who try natural methods to relieve their symptoms have found benefits when they eliminate coffee, alcohol, tobacco, and excessive sugar from their diets. They may not be aware of the impact that consuming refined carbohydrates has on their symptoms. For example, in a study conducted by Grachev and Apkarian (2000), there was a relationship between anxiety and the increased activity of the orbital frontal cortices for patients when they were exposed to a variety of concentrations including glucose, lactate, and their derivatives. Glucose is a monosaccharide sugar and lactate is a derivative of lactic acid which is produced by muscles when they contract while processing glucose. These concentrations are prevalent in refined carbohydrates and this is further evidence that those who have social anxiety or panic attacks should avoid products that contain these substances. When suffering from this psychopathology it is best to keep blood sugar levels even and focus on eating slow releasing complex carbohydrates or proteins that do not contain glucose (McLoone, Hudson, & Rapee, 2006).

Those suffering from anxiety may also benefit from the utilization of relaxation and biofeedback techniques. Biofeedback works in a congnitive fashion to teach a person how to control their bodily functions and reactions to anxiety in order to reduce over all stress (Murray, 1998). Relaxation techniques include progressions relaxation which is purposeful relaxation of the muscles in a controlled manner or yoga which focuses on breathing techniques.

The Internet and the utilization of e-mail and online learning environments may enable behaviors of social anxiety. A study by Reid and Reid (2007) demonstrated that individuals that have social anxiety disorder prefer to use text messages to communicate versus leaving a voice message or calling a person and verbally having a communication when they are given the choice. Socially anxious individuals are worried about their public performance and therefore the opportunity to reduce anxiety drives them to prefer Internet social interactions versus face to face communications (Caplan, 2007). Given these technological environmental enablers for isolation and avoidance, a therapist may want to consider the incorporation of a treatment called Exposure Therapy into the behavioral modification plan (Curtis, Kimball, & Stroup, 2004). Exposure Therapy, which is exposure to social situations in a monitored situation, has been proven to be even more effective when combined with psychotropic administration.

Combining psychotherapy and pharmacotherapy with different forms of anxiety can be beneficial. Pharmacotherapy may be an excellent solution for those suffering from acute anxiety that is associated with a life altering event such as a death of a loved one, a divorce, or the loss of a job, but long-term social anxiety disorders require further considerations. In these instances it is important to understand the relationship that depression, anxiety, and stress have with the activation in the amygdala (which manages aggression and fear responses) and the role of the hippocampus (which manages declarative memory) as these areas of the brain may be hypersensitive to certain events and

patients may respond to longer-term psychotherapy to help re-write the manner in which these areas of the brain interpret events (Bankey, 2004). Regardless, a holistic approach to managing social anxiety with psychotropics, natural solutions, and behavioral modification plans may be the best current treatment solution available at this time.

Future research opportunities

There is a fair amount of current research available that focuses upon social anxiety and theories regarding how this disorder affects children through adults as well as associations alcohol use disorder. There is also research available that suggests social anxiety may be both a result of nature and nurture as well as existing environmental factors. For example, theories suggest that there is a strong correlation between a mother's anxiety and her daughter's anxiety levels (Curtis, Kimball, & Stroup, 2004). Further, there are theories that support the success of cognitive behavioral therapies as well as pharmacological treatments.

However, there is not a great deal of peer-reviewed research available that discloses information regarding social anxiety, social phobia, anxiety disorders, and epidemiological research (Patten & Liu, 2007). This leaves a great opportunity to research areas such as mental health strategies with social anxiety preventions as well as further research into addictive personality disorders with social anxiety and alcohol misuse. There are also gaps in the literature surrounding the identification of social anxiety in children under the age

of 16 as well as limited clinical research in the psychtropic use for younger children with available pharmacological solutions (Kendall & Treadwell, 2007). Further research in these areas could bring upon a better understanding of the relationship between personality disorders, behavioral performance, and early detection of social anxiety disorder.

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