Social Anxiety Disorder

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Introduction

Social anxiety disorder (SAD), also referred to as social phobia, is characterized by persistent fear and avoidance of social situations due to fears of evaluation by others. SAD can be highly distressing, and it can interfere with school, work, and social life as sufferers avoid social or performance situations. Although many individuals with SAD report that their level of anxiety varies with the gender of those with whom they interact, and it has long been observed that men are overrepresented among patients seeking treatment for SAD relative to other anxiety disorders, there has been little study of gender differences in SAD. The gender literature that does exist for SAD, however, offers interesting implications for researchers and clinicians. This chapter will provide an overview of SAD with a specific focus on evidence for gender differences within this disorder.

Epidemiology

Prevalence, Demographics, and Clinical Features

Large epidemiological studies have established that SAD is one of the most common psychiatric disorders. The National Epidemiologic Survey on Alcohol and Related Conditions (NESARC), for example, recently found a lifetime prevalence of 5.0 % and 12-month prevalence of 2.8 % for SAD among 43,093 adults in the

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United States (Grant et al. 2005). A recent review (Fehm et al. 2005) of 21 community studies in European countries found median lifetime and 12-month prevalence rates of SAD of 6.7 % and 2.0 %, respectively. The WHO World Mental Health (WMH) Survey Initiative (Stein et al. 2010) found that lifetime social fears are common in both developed (15.9 %) and developing (14.3 %) countries; however, lifetime SAD has a higher prevalence in developed countries (6.1 %) compared to developing countries (2.1 %).

Mean age of onset is in the mid-teens, and onset after age 30 is uncommon (Schneier et al. 1992). Although prevalence of SAD is greatest among young adults, for many sufferers the disorder is chronic. Prevalence is also greater among persons who are less educated and those who are single (Schneier et al. 1992; Blanco et al. 2011). Additionally, SAD is usually accompanied by comorbid disorders, such as depression, substance abuse, or other anxiety disorders, which can further impair functioning (Fehm et al. 2005).

SAD has been shown in many studies to be associated with impairment and disability. SAD increases the risk of dropout from school, work absence, unemployment, and utilization of social welfare, causing significant financial costs for society (Lecrubier et al. 2000). When compared with persons with no psychiatric disorder, having SAD is associated with financial dependency and increased rates of suicidal ideation (Schneier et al. 1992; Cougle et al. 2009; Olfson et al. 2000). Katzelnick et al. (2001) examined costs and impairment associated with SAD in a community sample of 1,017 subjects. Subjects with generalized SAD and no comorbidity reported significant impairment in terms of family relations, romantic relationships, social network, and ability to moderate alcohol use, compared to those with no diagnosis. Generalized SAD was associated with significantly lower health-related quality of life, work productivity and earnings, and greater utilization of health services. During the month before participating in the survey, 12.2 % of subjects with SAD reported having had thoughts of suicide.

Several subtypes of SAD have been described. Generalized SAD has been the most studied subtype, and it was defined in DSM-III-R and DSM-IV by fear of most social situations (American Psychiatric Association 2000). Persons with generalized SAD tend to have more severe symptoms and impairment, and are more likely to seek treatment. The National Comorbidity Survey (1998) reported significantly greater comorbidity among persons with SAD and at least one feared situation other than public speaking. Persons with SAD involving three or more social fears also evidenced greater chronicity and impairment. Most persons with the nongeneralized type of SAD, or with the performance type newly described in DSM-5 (American Psychiatric Association 2013), have predominantly fears of performance such as public speaking, with relative sparing of social interaction situations.

Gender Differences in Community Samples

Prevalence of SAD among women has been found to be elevated relative to the rate in men in most community studies. In the NESARC study (Grant et al. 2005), 12-month prevalences were 2.1 % for men and 3.3 % for women; lifetime

prevalences were 4.2 % for men and 5.7 % for women. Similarly, elevated rates of SAD in women have been reported in European samples (Fehm et al. 2005). The female-to-male ratio of 1.35 for lifetime prevalence of SAD in the NESARC study (Xu et al. 2012) is within the range of previous epidemiological studies (Kessler et al. 1994; Ohayon and Schatzberg 2010). The ratio is lower, however, than gender ratios reported for other anxiety disorders in major epidemiologic studies, which have ranged from 1.8 for generalized anxiety disorder in the National Comorbidity Survey (Kessler et al. 1994) to 2.7 for agoraphobia in the Epidemiological Catchment Area (Bourdon et al. 1988). Xu et al. (2012) also found that men with SAD were more likely than women with SAD to have never been being married, or to be separated or divorced.

Crome et al. (2012) sought to investigate whether the preponderance of women among those diagnosed with SAD by community surveys was due to a response bias of women being more likely to respond positively to questions about SAD. The study involved a subsample of 1,755 participants in the Australian National Survey of Mental Health and Wellbeing who had reported at least one social fear. A series of factor analyses suggested that men and women tended to respond comparably to SAD diagnosis items. Men, however, tended to report lower levels of physical symptoms at low levels of social fear, compared to women. Overall, findings supported the legitimacy of higher rates of SAD among women.

Gender differences among persons with SAD were examined in a recent cross-sectional study by MacKenzie and Fowler (2013) of 36,984 Canadians aged 15–80 years. Men with SAD were more likely to be single, unattached, and living alone than women with SAD. Women with SAD were more likely to be widowed, separated, or divorced, and they were more likely to be a single parent. Women also reported poorer mental health and greater stress levels than men with SAD.

Several studies have examined the course of SAD in women and men. Gender differences in prevalence of SAD were small in the pre-school and elementary school years but increased after the age of 12, according to a retrospective study of 8,116 Canadian adults (DeWit et al. 2005). For persons with the generalized subtype of SAD, at every age from pre-school to early adulthood, the proportion of females who had developed SAD exceeded the proportion of males. In contrast, a female preponderance for the development of *nongeneralized* SAD began to emerge only after the age of 12. In a study of 2,128 Swedish students aged 12–14, the prevalence of SAD was 6.6 % among girls versus 1.8 % among boys (Gren-Landell et al. 2009), and 91.4 % of the children with SAD reported impairment in school functioning.

Gender differences in the prevalence of specific types of social fears have also been reported. A survey of 526 community respondents (Stein et al. 1994) showed that women reported significantly greater anxiety about public speaking, speaking to strangers, meeting new people, and dealing with people in authority, but that men and women did not differ significantly in severity of anxiety while writing in front of others, eating in front of others, or attending social gatherings. Women with SAD in the community also experienced higher rates of some social fears (Xu et al. 2012). Men and women with lifetime SAD differed significantly in rates of fear of dating (men 29.5 % vs. women 22.3 %), being interviewed (men 39.7 % vs. women 52.0 %), and speaking at a meeting (men 69.4 % vs. women 74.9 %).

Several community studies have examined gender differences in comorbidity among individuals with SAD. Xu et al. (2012) found that men with a lifetime diagnosis of SAD were more likely to have lifetime alcohol abuse and dependence, drug abuse and dependence, pathological gambling, conduct disorder, and antisocial personality disorder. Women were more likely to suffer from mood and anxiety disorders, except bipolar I and II disorders, which had the same probability to be diagnosed in both genders. Women with SAD were thus more likely to have comorbid internalizing disorders and less likely to have comorbid externalizing disorders.

Rodebaugh et al. (2012) examined the impact of psychiatric disorders on friendship quality by gender, among participants in the National Comorbidity Survey (Kessler et al. 2004). SAD had a negative effect on friendship quality in both men and women, although in men this was exacerbated when comorbid generalized anxiety disorder was present, whereas in women comorbid major depression was associated with an additional negative impact on friendship quality.

In adolescents, a Finnish study (Väänänen et al. 2011) found gender differences in the longitudinal relationship between SAD and depression. In this population-based prospective study of 15-year-olds ($N = 2{,}038$), SAD at baseline increased the risk for depression over the next 2 years in boys only. Among adolescent girls, baseline depression was a risk factor for subsequent SAD. Wu and colleagues (2010) looked at gender differences in the relationship between SAD and substance use among 781 adolescents in the community. In girls, there was a trend for SAD to be associated with lower rates of substance use. In boys, however, cigarette smoking was significantly associated with SAD.

Buckner and colleagues have further investigated the interactions between SAD, substance use disorders, and gender. In one study, Buckner et al. (2006) examined the relationship between cannabis use disorder, SAD, and peer influence in 123 male and female undergraduates. Symptoms of SAD were significantly related to symptoms of cannabis use disorder only among women. This relationship was further moderated in women by the influence of peers and their use of alcohol and cannabis. Specifically, women with more SAD symptoms were particularly prone to problematic cannabis use and more vulnerable to influences from peers. In another study (Buckner and Turner 2009), SAD was a risk factor for development of alcohol use disorders among women only, in a 3-year prospective study of 1,803 young adults from the National Comorbidity Survey. The risk of women developing an alcohol use disorder was further moderated by lower family cohesion and more adverse family relations.

In respect to treatment seeking, individuals with SAD typically do not seek treatment until their late 20s to 30s, despite a mean age of onset of SAD in early adolescence (Mannuzza et al. 1995). Xu et al. (2012) reported that among persons with lifetime SAD in the community, men and women did not differ in their overall probability of treatment seeking for SAD. Lifetime rates of treatment seeking for SAD were 17.9 % for men and 19.2 % for women; lifetime rates of use of medication for SAD were 8.8 % for men and 12.4 % for women. Thus, over 80 % of individuals with SAD in the NESARC study had received no treatment for it, and the mean age at first treatment was 27.2 years (Grant et al. 2005).

Gender Differences in Clinical Samples

There have been relatively few studies of gender differences in clinical samples of SAD patients. One study assessed gender differences in SAD features and treatment outcome in an anxiety clinic sample with 108 men and 104 women, of whom a similar proportion of men and women had received a diagnosis of SAD (63.9 % vs. 71.2 %) (Turk et al. 1998). Among patients with SAD, men and women reported suffering from SAD for similar lengths of time (19.3 vs. 20.3 years). There were no significant differences in the proportions of men and women who reported previous psychotherapy (61.6 % vs. 63.6 %) or treatment with pharmacotherapy (38.4 % vs. 31.8 %). Men and women did not differ significantly in rates of comorbid mood disorders (21.9 % vs. 27.3 %) or anxiety disorders (38.4 % vs. 48 %). Women reported more severe social fears and differences in pattern of feared situations, however. Women reported significantly greater fear in situations of talking to authority figures, performing/giving a speech in front of an audience, working while being observed, entering a room while others are already seated, being the center of attention, speaking up at a meeting, expressing disagreement or disapproval to people they do not know very well, giving a report to a group, and giving a party. Men reported significantly more fear than women when urinating in public bathrooms and returning goods to a store.

Yonkers and colleagues (2003) studied a sample of 66 men and 96 women patients with SAD who were participating in an 8-year naturalistic study. There was a nonsignificant trend for onset of SAD to have occurred at an earlier age in women, 14 years, compared to 16 years for men. The probability of remission of SAD over the follow-up period of up to 8 years was only 31 % and did not differ by gender. Among 105 adolescent patients with a gender identity disorder, there was a higher rate of SAD in those who had been assigned male gender at birth (15.1 %) than those who had been assigned female gender (3.8 %) (DeVries et al. 2011). Ham et al. (2005) examined perceived social support quantity and satisfaction in 23 women and 28 men seeking treatment for SAD. Men and women did not differ on measures of social support. Among the women with SAD, however, younger, unmarried women reported having smaller social support networks and less satisfaction with their social support networks than older, married women. This pattern was not present among the socially anxious men. Randall and colleagues (2000) compared 110 male and female patients with SAD and alcohol use disorders. Women had higher fear ratings on SAD measures compared to men. They also experienced more distress in social and family functioning and had a higher rate of psychiatric comorbidity.

Psychobiology

Neural Circuitry

A growing number of neuroimaging studies of SAD during the last decade have attempted to elucidate the neural mechanisms of the disorder. The most consistent findings have demonstrated increased activation of the amygdala and surrounding

cortices, including the hippocampus (Schmidt et al. 2010) in persons with SAD during exposure to emotional threat stimuli, such as angry faces. Functional neuroimaging studies have reported that exaggerated amygdala activation is positively correlated with symptom severity and decreases after successful treatment (Furmark et al. 2002). Furthermore, treatment studies indicate that both pharmacotherapy and psychotherapy of SAD normalize activation in the amygdala and related structures (Goldin and Gross 2010).

Pathophysiology

A variety of neurotransmitter systems, including serotonin, norepinephrine, dopamine, GABA, and glutamate have evidenced abnormalities in SAD. Dysfunction of the hypothalamic-pituitary-adrenal axis has also been reported. Few of these studies, however, have assessed outcome by gender. In a study of 53 patients seeking treatment for SAD, however, heart rate variability, an index of autonomic control, was reduced in SAD overall, but also more specifically among women with SAD (Alvares et al. 2013). This may indicate a greater sensitivity to the effects of social anxiety on parasympathetic nervous system reactivity in women.

The prototypical onset of SAD in early adolescence has raised questions about the impact of physiological and psychosocial changes of puberty. Deardorff et al. (2007) assessed 106 children aged 9–11 for pubertal status and social anxiety. Advanced pubertal development was associated with higher levels of social anxiety among girls only, consistent with findings of gender differences in depression.

Genetics and Family Studies

Family studies have shown that SAD is familial (e.g., Lieb et al. 2000), with first-degree relatives of adults with SAD being three times as likely as relatives of control subjects to suffer from SAD (Fyer et al. 1995). Some studies have further suggested that the generalized subtype may be more familial than the specific subtype (Stein et al. 1998). Part of this familial risk is attributable to genetic heritability, and twin studies suggest that the underlying structure of the genetic and environmental risk factors is similar between men and women (Hettema et al. 2005).

Genetic influences on the development of SAD may be specific to the disorder, or may be related to relatively nonspecific factors, such as negative affect. A highly heritable temperamental trait that is thought to predispose individuals to SAD is behavioral inhibition, characterized by a consistent pattern of behavioral, physiological, and emotional responses to unfamiliar people and novel situations. Inhibited children usually respond with restraint and withdrawal to novel objects and situations, and they are usually shy with unfamiliar people (Kagan 1994). In a longitudinal study of 238 children, girls evidenced greater inhibition and afternoon cortisol levels as preschoolers, and they were at greater risk for developing chronic high inhibition and SAD (Essex et al. 2010).

Psychological Aspects of Pathogenesis

Psychosocial factors, such as parenting, peer interactions, and culture can play an important role in the development of SAD. Socially anxious adults often report having experienced negative parenting qualities such as overprotection, lack of warmth, excessive concern with the opinion of others, and rejection during their childhood (Caster et al. 1999). Adults with SAD are more likely to recall their parents as excessively protective and controlling (Rapee and Melville 1997).

Childhood maltreatment has been associated with symptom severity, reduced quality of life, and impaired functioning in adults with SAD (Bruce et al. 2012). Data were obtained from 156 treatment-seeking patients with a primary diagnosis of generalized SAD who had a history of childhood trauma. Childhood emotional abuse, emotional neglect, and physical neglect, but not sexual or physical abuse, predicted more severe symptoms in patients with SAD. Of the maltreatment subtypes, emotional abuse was the strongest predictor of severity of social anxiety, disability, and decreased quality of life. Other studies have linked SAD with early sexual abuse. Feerick and Snow (2005) examined the relationship between childhood sexual abuse and SAD in a sample of 313 undergraduate women. In this study, 31 % of the women reported that they had experienced some form of sexual abuse in childhood. Women with a history of sexual abuse reported more symptoms of anxiety and distress in social situations than women who had not experienced sexual abuse. Those women whose abuse included actual or attempted intercourse had higher scores for social avoidance than women who had not been abused, or who had experienced other forms of abuse such as exposure or fondling. In addition to the type of abuse experienced, earlier age of onset of abuse also significantly predicted greater avoidance and distress in adulthood.

McGabe et al. (2003) found a relationship between bullying in childhood and adolescence and SAD later in life. This study assessed the relationship between childhood memories for teasing and SAD in adulthood. Five hundred and fourteen undergraduates completed a questionnaire that measured the degree to which people recall having been teased during childhood and also completed established measures of SAD. Men and women recalled having been teased with similar frequency; however item-by-item analysis suggested that boys had a more negative experience with teasing than girls (e.g., men remembered having been teased about not doing well at school and being a troublemaker more often than women).

Parents impact their children's social interactions directly by arranging play dates, overseeing play situations, and supervising peer interactions (Masia and Morris 1998). Thus, parents' relationships and skills related to their child's development could influence their social and emotional development. Maternal SAD has been shown to significantly predict SAD in offspring (Bögels et al. 2001). Although most of the research on parenting has focused on mothers, paternal influences may also be important (Greco and Morris 2002). The influence of fathers is smaller, however, and more significant later in the child's life (Connel and Goodman 2002).

Contemporary theories of SAD emphasize the role of cognitive processes in the maintenance of the disorder, and a theoretical model has been proposed

(Clark and Wells 1995). According to this model, individuals with SAD are apprehensive in social situations because they perceive the social standard as being high and they doubt that they are able to make a favorable impression, which will result in disastrous consequences (Leary 2001). This leads to a further increase in apprehension and increased self-focused attention, which triggers a number of additional cognitive processes (Hirsch and Clark 2004). As a result, the individual with SAD anticipates social mishaps and engages in avoidance and/or safety behaviors (Wells et al. 1995).

Avoidance and safety behaviors play an important role in the maintenance of SAD, because they reinforce social fears and diminish opportunities for positive social experiences. Individuals with SAD engage in safety behaviors in social situations in order to minimize negative evaluations from others; typical examples of safety behaviors include avoiding eye contact, monitoring one's speech, and avoiding pauses while talking (Kim 2005). When safety behaviors are used, the individual attributes the nonoccurrence of feared catastrophes to the implementation of the safety behavior. Therefore, safety behaviors are maladaptive, because they prevent exposure to the feared social situations and processing of the emotional information, for example, individuals who speak little in social encounters because they fear negative evaluation are less likely to receive positive feedback from others (Clark 2001).

In addition to the previously mentioned cognitive and behavioral factors that contribute to the development and/or maintenance of SAD, recent evidence also suggests a contributing role of exaggerated negative emotional reactions, attenuated positive emotional reactions, and emotion regulation difficulties in producing functional impairment (Goldin et al. 2009). While there are numerous ways of affecting one's emotional experiences, two specific strategies have received substantial scientific attention: cognitive reappraisal and emotion suppression. Cognitive reappraisal involves changing one's perspective to downplay or enhance a situation's emotional impact and altering the interpretation of emotional information (Gross 2002). Emotion suppression involves inhibiting emotional responses to a situation by downregulating the expression of the emotion. People with SAD report frequently suppressing both positive (Werner and Gross 2010) and negative emotions (Erwin et al. 2003). Excessive use of suppression can have negative impact on the positive experiences of people with SAD. A meta-analysis of 19 studies found a stable, moderate relationship between SAD and less frequent and intense positive emotions (Kashdan 2007). Maladaptive emotion regulation contributes to the adverse impact of social anxiety on positive events in daily life, and people high in SAD report using more positive emotion suppression (Turk et al. 2005). One reason for this may be that individuals with SAD find expressing positive emotions in social-evaluative situations to be uncomfortable (Kashdan et al. 2011). While suppressing positive emotions may help individuals with SAD to minimize social attention towards them, it may also contribute to sustained anxiety and avoidance of interactions.

Diagnosis

DSM-5

The Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (American Psychiatric Association 2013), offers operationalized criteria for the diagnosis of psychiatric disorders by clinicians and researchers. In 2013, the publication of the Fifth Edition of the DSM incorporated several changes to the criteria for SAD (Heimberg et al. 2014). First, while "social anxiety disorder" had been previously considered a secondary name for "social phobia," it is now recognized in DSM-5 as the principal name for this diagnosis, because it was felt to better convey the sense of pervasiveness and impairment associated with the disorder. The description of primary fear in SAD was broadened beyond showing embarrassing or humiliating anxiety symptoms, to include fear of showing symptoms that will be negatively evaluated. Whereas DSM-IV required that the person must recognize that the fear is excessive or unreasonable, DSM-5 instead requires that the fear be out of proportion to the actual threat, and encourages consideration of cultural context. Another change was to allow the diagnosis of SAD to be made in the presence of another embarrassing medical condition, as long as the social anxiety symptoms are either unrelated to the medical condition or excessive, in the clinician's judgment.

DSM-5 criteria for SAD require two key features:

- A marked fear or anxiety about social situations or performance situation in which scrutiny by others could occur. For a child to be diagnosed, the anxiety must occur with peers, and not only with adults.
- The individual fears showing behaviors or anxiety symptoms that will result in negative evaluation by others, and experiences such as embarrassment or rejection by others.

In addition, DSM-5 criteria require that the social situations must almost always provoke fear or anxiety, and the situations are avoided or endured with fear and anxiety. The fear or anxiety must be out of proportion to the actual threat posed by the social situation. Symptoms must have persisted for at least 6 months or more, and they must cause clinically significant distress or impairment in social or occupational functioning. Finally, social anxiety and avoidance cannot be due to the physiological effects of a drug of abuse, a medication, or another medical condition. It also must not be better explained by the symptoms of another mental disorder, such as when social avoidance occurs in depression due to lack of social interest. Social anxiety disorder can be diagnosed in the presence of another potentially embarrassing medical condition, such as essential tremor or disfigurement from burns, if the fear, anxiety, and avoidance are unrelated to the medical condition or is excessive.

ICD-10

The International Classification of Disease, 10th Edition (ICD-10) criteria for social phobia, developed by the World Health Organization (WHO) are as follows:

All of the following criteria should be fulfilled for a definite diagnosis:

(a) The psychological, behavioral, or autonomic symptoms must be primarily manifestations of anxiety and not secondary to other symptoms such as delusions or obsessional thoughts.
(b) The anxiety must be restricted to or predominate in particular social situations.
(c) The phobic situation is avoided whenever possible.
Includes: anthrophobia; social neurosis

Differential Diagnosis

Below we briefly review some of the clinical issues in distinguishing SAD from other common conditions. In addition to trying to distinguish SAD from related disorders, it must be recognized that any of these conditions can also occur comorbidly with SAD.

Shyness Shyness is a personality trait that is not inherently pathological. While many persons with SAD may consider themselves shy, SAD differs in having a significant adverse impact on social, occupational, and other important areas of functioning.

Agoraphobia Individuals suffering from agoraphobia may fear and avoid social situations; however, their primary fear is that escape from a social situation may be difficult in the event of incapacitation or panic-like symptoms, whereas individuals with SAD are primarily fearful of the potential for scrutiny by others that is inherent in an interpersonal situation.

Panic disorde Individuals with SAD may have panic attacks, but such panic attacks are manifestation of their primary concern about fear of negative evaluation, and the panic attacks are limited to being in or thinking about a social situation. In panic disorder, panic attacks usually occur in situations both with and without others present, and the primary concern is about the panic attacks themselves, rather than fear of scrutiny.

Generalized anxiety disorder Social worries are common in generalized anxiety disorder, but they constitute just one focus among broader concerns that may include worries about health, money, and safety.

Separation anxiety disorder Individuals with separation anxiety disorders may avoid social settings because of concerns about being separated from attachment figures. People with separation anxiety disorder are generally comfortable in social settings when the attachment figure is present or when they are at home.

Specific phobia Individuals with specific phobias may fear humiliation or embarrassment secondarily to their primary phobia (e.g., embarrassment about being seen fainting when blood is drawn), but they do not more generally fear negative evaluation in other public or social situations.

Major depressive disorder Individuals with major depressive disorder may be concerned about negative evaluation because they feel they are not worthy of being liked, and they may avoid social situations out of lack of motivation and interest.

Body dysmorphic disorder Individuals with body dysmorphic disorder are preoccupied with perceived flaws in their physical appearance that are not observable to others. They are primarily concerned with their own evaluation of these flaws, rather than by negative evaluation by others.

Psychotic disorders Individuals with psychotic disorders may avoid interpersonal situations due to paranoid belief of the threat of harm from others. Persons with SAD, however, generally have good insight that their beliefs are out of proportion to the actual threat posed by the social situation.

Autism spectrum disorder Social anxiety and social communication deficits are hallmarks of autism spectrum disorder. However, individuals with SAD usually have adequate age-appropriate social relationships and capacity for social communication.

Personality disorders Due to its frequent onset in childhood and persistence into adulthood, SAD shares features with personality disorders. Avoidant personality disorder criteria greatly overlap those of SAD, so they often co-occur, especially among persons with more severe and pervasive SAD.

Eating disorder Persons with anorexia or bulimia nervosa may have excessive concerns about negative evaluation related to their body image or secondary to others observing their problematic eating behavior. In persons with SAD, however, social fears are not limited to concerns about body image or eating behaviors.

Medical conditions that draw unwanted attention Medical conditions can produce symptoms that may be embarrassing for some sufferers (e.g., trembling in Parkinson's disease). These persons are not diagnosed with SAD unless the symptoms of SAD are out of proportion to that expected from the level of the symptoms of their other medical condition.

Evaluation

As patients with SAD often present with other symptoms, such as depression, and they sometimes initially minimize social anxiety symptoms that have often been highly chronic, an evaluation should proactively probe functioning across a variety of social situations to map the scope of the disorder. Rating scales may be helpful in assessing severity of SAD and monitoring improvement during treatment. One of the most commonly used measures to assess symptom severity in SAD is the Liebowitz Social Anxiety Scale, which assesses fear and avoidance of 24 social situations. It can be administered by a clinician or self-rated, has good internal consistency, and correlates with other measures of social anxiety (Heimberg et al. 1999). The Social Interaction Anxiety Scale (Mattick and Clarke 1998) is a self-report measure that consists of 20 items and evaluates anxiety experienced in dyadic and group interactions. The Social Phobia Scale (Mattick and Clarke 1998) is another self-report measure that assesses fear of performance and observation situations.

Evaluation of SAD should take into account developmental factors. Increases in fears of social evaluation are part of normal development; however, for some children and adolescents these fears become extreme and do not dissipate over time. The vast majority of children and adolescents with SAD go unrecognized by both parents and professionals, including school personnel. When recognized, the diagnosis and assessment of SAD among children and adolescents is complicated by several factors. First, children's and adolescents, level of cognitive development affects the degree to which they are able to articulate concerns and fears of humiliation, which is more difficult for younger children (Southam-Gerow and Kendall 2000). Second, the manifestation of SAD varies by age. Younger children have more crying and episodic illusions, such as being looked at and talked about by strangers (Abe and Suzuki 1986), whereas adolescents present more externalizing problems such as fighting, truancy, and covert antisocial behavior (Davidson et al. 1994). Third, boundaries between normal and pathological fears are often ambiguous, especially in adolescence in which concerns about peer acceptance and body image are common (Petersen and Leffert 1995).

Pharmacotherapy

Pharmacotherapy, along with CBT and other psychotherapies discussed below, constitutes one of the most common modalities of treatment for SAD. Below we review the main classes of medications that have evidence for efficacy in SAD. These include the serotonin reuptake inhibitors (SSRIs), serotonin-norepinephrine reuptake inhibitors (SNRIs), benzodiazepines, monoamine oxidase inhibitors, and others.

Serotonin reuptake inhibitors are the first-line medication option for treatment of SAD, based on evidence from over 20 randomized controlled trials (RCTs) of five medications within this class. Paroxetine, sertraline, and fluvoxamine are FDA-approved for the indication of SAD in United States. The serotonin-norepinephrine reuptake inhibitor venlafaxine has also been FDA-approved for SAD on the basis of

several RCTs. A meta-analysis of medication trials found that, relative to placebo, treatment response was superior for the SSRIs ($N=19$ studies; relative risk of response (RR) = 1.69; 95 % CI: 1.49, 1.90; Total sample $N=4{,}615$) and for venlafaxine ($N=4$; RR = 1.59; 95 % CI: 138, 1.83; $N=1{,}173$) (Ipser et al. 2008).

Treatment with SSRIs and SNRIs is dosed similarly to dosing used in depression (i.e., median effective paroxetine dose 20 mg/day). An adequate trial of SSRI or SNRI medication may require 8–12 weeks to assess efficacy (Stein et al. 2002). Advantages of SSRIs include a relatively mild adverse-effect profile, safety in overdose or with concurrent use of alcohol, and a broad spectrum of efficacy for comorbid anxiety and affective disorders. Common side effects include nausea and sexual dysfunction.

The benzodiazepines have been far less studied for SAD, but the best evidence for efficacy in this class exists for clonazepam. Davidson et al. (1993) reported that in a 10-week double-blind, placebo-controlled study of clonazepam in 75 patients, 78 % of those on clonazepam (mean standing dose of 2.4 mg/day) and 20 % of those on placebo were rated as at least moderately improved. Another randomized clinical trial found that clonazepam and cognitive-behavioral group therapy were equally effective after 12 weeks of treatment (Otto et al. 2000). In a placebo-controlled discontinuation trial among SAD patients effectively treated with clonazepam, 79 % were able to tolerate slow taper (0.25 mg reduction every 2 weeks) and discontinuation without relapse (Connor et al. 1998). Benzodiazepines are a second-line medication treatment due to their lack of efficacy for comorbid depression, risk of abuse, contraindication in the presence of comorbid substance abuse, potential adverse effects on cognition and coordination, and routine development of physiological dependence requiring slow taper when drug is to be discontinued.

The monoamine oxidase inhibitors (MAOIs) are another class of medications that have appeared efficacious in multiple RCTs, but they are reserved for refractory cases due to dietary restrictions and risk of serious side effects (see Schneier 2011 for more complete review of SAD pharmacotherapy). Reversible inhibitors of monoamine oxidase, such as moclobemide, appear safer but probably less efficacious. Other medications with evidence of efficacy in at least one RCT include the antidepressant mirtazapine and the alpha-2-delta calcium channel agents gabapentin and pregabalin.

Reviews of medication treatment of SAD generally have not found gender to be a significant moderator of treatment response (e.g., Stein et al. 2004). An exception to this was the two-site RCT of gabapentin (Pande et al. 1999), in which placebo-treated women had higher response rates than placebo-treated men (42 % vs. 0 %), but genders did not differ in response rates to active gabapentin.

Psychotherapy

Cognitive-behavioral therapy (CBT) is the most comprehensively studied psychotherapeutic method for treatment of SAD, and its effectiveness has been established in multiple RCTs (Heimberg 2002). CBT is commonly comprised of

two main components: exposure, which involves strategies to confront feared situations and to test for feared consequences by conducting behavioral experiments, and cognitive restructuring, with the goal of challenging maladaptive cognitions and developing more helpful coping thoughts. CBT is typically conducted weekly over a 3–6 month period, in group or individual format. After initial psychoeducation, the patient and therapist develop a hierarchy of anxiety-provoking situations. Exposures typically begin with one of the least feared situations and then gradually approach more difficult situations as a sense of mastery is achieved.

In the cognitive restructuring component of CBT, individuals are taught to:

1. Identify negative thoughts related to the anxiety-provoking situations
2. Evaluate the accuracy of their beliefs
3. Derive alternative thoughts based on the information

Several meta-analyses of a variety of CBT support the clinical efficacy of CBT for SAD (Federoff and Taylor 2001; Feske and Chambless 1995; Taylor 1996). Effectiveness of social skills training and cognitive restructuring without exposure were evaluated in three meta-analyses (Federoff and Taylor 2001; Taylor 1996). These treatments yielded more modest effect sizes.

Other forms of psychotherapy have received support for efficacy but have been less studied. Mindfulness and acceptance-based therapies emphasize present-moment focus and a nonjudgmental awareness of cognitive, emotional, and physiological processes (e.g., Kabat-Zinn 2003). Interpersonal Psychotherapy (IPT), which focuses on correcting dysfunctional patterns in interpersonal relationships, is a time-limited approach that employs specific techniques, such as reassurance, role-playing, and control of emotions. In psychodynamic therapy for SAD, the patient is encouraged to examine beliefs about negative judgment and abandonment (Leichsenring et al. 2013).

Gender has not been shown to moderate outcome of psychotherapy, but psychotherapists need to be sensitive to how a patient's culture may influence attitudes about approaching others of the opposite sex, or how an office subculture's attitudes about gender may impact a patient's efforts to increase assertiveness. Turk et al. (1998) also noted that evidence for gender differences in pattern of social fears supports the practice of attending to the gender composition of therapy groups when CBT for SAD is offered in group format. They observed that men and women with SAD more easily identify with the experiences of same-gender peers, and therefore treatment groups that have a very small number of male or female participants put the underrepresented gender at risk for dropping out. Additionally, offering feedback in the form of reviewing videos of CBT exposures has been reported in some studies to help patients become aware of the discrepancy between their beliefs about their behavior versus their actual social performance. One report, however, suggests that use of video feedback in CBT may be less effective in men (Chen et al. 2010).

Conclusions

A growing body of studies has explored gender differences in SAD, one of the most common anxiety disorders. SAD, like most anxiety and depressive disorders, is more common among women overall. Although women in the community do not report lesser severity of SAD or lesser rates of treatment seeking, clinical samples of SAD have often been found to include equal representations of men and women, or even a predominance of men. Men are more likely to report dating problems, whereas women have higher rates of difficulty speaking up in groups or work situations. Women are more likely to experience comorbid internalizing disorders, and men are more likely to have substance use disorders. It is likely that these patterns of difference reflect differences in both societal influences and physiology.

A smaller number of developmental studies suggest that a variety of gender-related influences play a role in the development of SAD. These range from the psychosocial, such as increased rates of abuse among girls, to complex influences, such as the combined hormonal and social mechanisms by which early puberty may lead to increased social anxiety in girls, to physiological differences in cortisol and heart rate variability. The findings highlight the need for further research to disentangle the complicated influences of gender on SAD, and the importance for clinicians to be sensitive to potential gender differences in etiology and the need to target treatments to the personal characteristics of the individual.

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