RESEARCH ARTICLE

Gender differences in social anxiety disorder

Maya Asher1 | Idan M. Aderka2

1Department of Psychology, University of Haifa
2Department of Psychology, University of Haifa

Correspondence
Idan M. Aderka, Department of Psychology, Mount Carmel, Haifa 31905, Israel.
Email: idan.aderka@gmail.com

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Abstract

Objective Despite the ample literature on gender differences in anxiety and mood disorders, gender differences in social anxiety disorder (SAD) have received little empirical attention. The aim of the present study is to examine gender differences in 12-months prevalence, patterns of comorbidity, clinical presentation, subjective distress and functional impairment, age of onset, and treatment seeking, and discuss their clinical implications.

Method We used data from the National Comorbidity Survey-Replication (NCS-R; n = 652, 63.3% women) to examine gender differences.

Results Main findings highlighted that compared with men, women are more likely to have SAD, to have a more severe clinical presentation of the disorder and to have greater subjective distress. Women are more likely than men to have comorbid specific phobia, generalized anxiety disorder and posttraumatic stress disorder, whereas men are more likely to have comorbid substance abuse disorders and conduct disorder.

Conclusions Greater SAD prevalence and severity among women can have implications for assessment (e.g., potentially setting gender-specific cutoffs) and treatment (e.g., guiding exposures) of SAD.

KEYWORDS
gender differences, prevalence, social anxiety disorder, treatment seeking

1 | INTRODUCTION

Social anxiety disorder (SAD) is a common and debilitating psychiatric disorder with an estimated lifetime prevalence rate of 12.1% (Kessler et al., 2005). It is characterized by a marked and persistent fear of one or more social situations or performance activities (e.g., giving a speech) in which the person is exposed to unfamiliar people, and may face possible scrutiny by others (American Psychiatric Association, 2013). These difficulties in interpersonal interactions...
experienced by individuals with SAD result in significant impairment in almost all facets of daily life (e.g., Aderka et al., 2012).

Considering the large body of research on SAD, and despite accumulating data about gender differences in other disorders (e.g., panic disorder: Barzega, Maina, Venturello, & Bogetto, 2001; posttraumatic stress disorder (PTSD): Tolin & Foa, 2006; depression: Parker & Brotchie, 2010) there is a paucity of research directly examining gender differences in SAD. Examining gender differences in SAD can offer meaningful information for both researchers and clinicians (Schneier & Goldmark, 2015). Specifically, it can provide a better understanding of the similarities in men and women, but also of the way SAD symptoms differentially impact individuals of each gender. This type of understanding can ultimately help develop more gender-sensitive interventions for men and women with SAD (Asher, Asnaani, & Aderka, 2017).

A recent study based on data from the U.S. epidemiologic sample of alcohol and related conditions (NESARC) found gender differences in several aspects of SAD (Xu et al., 2012). Specifically, it was found that significantly more women suffer from SAD, and that women with SAD endorse a greater number of social fears and lower levels of psychosocial functioning compared to men with the disorder. Differences in the types of social situations feared by men and women with SAD were also found, such that compared to men with SAD, women with the disorder were more likely to fear professional situations such as being interviewed, speaking to an authority figure and speaking up in a meeting. Women were also more likely than men to fear taking an important exam and eating and drinking in front of others. Men with SAD on the other hand, were more likely to fear dating. Gender differences in patterns of comorbidity also emerged (Xu et al., 2012), such that men with SAD were more likely to suffer from a comorbid externalizing disorder, and women with SAD were more likely to suffer from comorbid internalizing disorders. It was also found that men and women were equally likely to seek psychological treatment for SAD, but women were more likely to have received pharmachological treatment for it.

Mirroring findings from the NESARC sample, a study based on data from the Canadian Community Health Survey Cycle 1.2. (MacKenzie & Fowler, 2013) reported that women were more likely than men to meet diagnostic criteria for SAD. In addition, women with SAD were more likely to meet criteria for either comorbid lifetime or 12-months major depressive disorder (MDD) compared to men with SAD.

It is important to note that not all studies found significant gender differences in SAD prevalence. Data from the Collaborative Psychiatry Epidemiology Studies (CPES) which integrates three national community surveys conducted in the U.S. (NCS-R, NSAL, and NLAAS; see Mclean, Asnaani, Litz, & Hofmann, 2011, for more details) indicated that SAD was the only anxiety disorder that did not evidence significant gender differences in current or lifetime rates (Mclean et al., 2011). However, despite not reaching statistical significance, descriptive statistics were in the direction indicating greater prevalence among women compared with men (lifetime prevalence for women = 10.3%, lifetime prevalence for men = 8.7%).

Complementing the epidemiological studies, an 8-year prospective longitudinal study followed individuals with SAD and examined gender differences in the course of SAD (Yonkers, Dyck, & Keller, 2001). Specifically, no gender differences in age of onset were found, with women reporting a mean age of onset of 14.2 years and men reporting a mean age of onset of 14.4 years. There was also no significant difference in the percentage of women and men who experienced a remission after 1 year, 4 years, and 8 years of prospective follow up. Similar results were reported in a follow up study which included additional participants (Yonkers, Bruce, Dyck, & Keller, 2003). In that study, it was found that remission and relapse rates did not significantly differ between men and women with SAD.

The aim of the present study was to add to the limited and inconsistent existing knowledge regarding gender differences in SAD. Indeed, a number of gaps exist in the literature. First, previous epidemiological studies have focused on lifetime SAD (Xu et al., 2012). However this places individuals who are currently or have been recently symptomatic, together with those who have had SAD years or decades before the survey and have no current symptoms. Thus, in the present study, we chose to focus on 12-months rather than lifetime SAD. Second, most previous studies have not focused on gender differences and have not conducted a systematic assessment of such differences in SAD. Instead, many previous studies have focused on other issues and have reported some gender differences in those contexts (e.g., MacKenzie & Fowler, 2013). Thus, in the present study, we sought to focus on gender
differences and examine them systematically and comprehensively, tapping multiple facets of SAD. Third, it remains unclear to what extent findings on gender differences in prevalence are the product of specific questions/interview procedures and to what extent they represent actual differences in the psychopathology examined. Thus, using a different sample, with different measures can complement previous studies and increase our confidence regarding gender differences.

To address these gaps, we examined data from a large, nationally representative sample in the U.S.: The National Comorbidity Survey-Replication (NCS-R; 2001–2003). Based on the extant literature we hypothesized that (H1) Women would be diagnosed with 12-months SAD to a greater extent compared with men (i.e., SAD prevalence among women would be greater compared with men); (H2a) Women would be diagnosed with comorbid internalizing disorders (e.g., anxiety disorders) to a greater extent compared with men; (H2b) Men would be diagnosed with comorbid externalizing disorders (e.g., substance abuse and dependence) to a greater extent compared with women; (H3) Women would endorse more social fears compared with men (i.e., women would have a more severe clinical presentation compared with men). In addition, due to the paucity of research we explored gender differences in a number of additional domains without explicit hypotheses: (4) subjective distress and functional impairment; (5) age of onset; and (6) treatment seeking. These domains provide a comprehensive assessment of gender differences in SAD which can inform assessment and treatment of the disorder (Asher et al., 2017).

2 | METHOD

2.1 | Participants and procedure

The present study included all individuals meeting criteria for 12-months SAD in the NCS-R (n = 652). Of the entire sample, 63.3% were women, and mean age for the entire sample was 39.65 (SD = 14.28). In addition, 71.8% of participants were non-Hispanic whites, 12.9% were non-Hispanic blacks, 8.9% were Hispanic, 9% were Asian, and 6% were Afro-Caribbean. The majority of participants (61%) were employed, 4.8% were unemployed, and 33.1% were out of the labor force. Approximately half (46%) of the participants were married or cohabiting, 27.1% have never been married, and 26.8% were divorced.

The NCS-R was undertaken between February 2001 and April 2003 to assess the mental health of persons residing in the United States. Specifically, face-to-face interviews were carried out by professional interviewers from the Institute for Social Research at the University of Michigan, Ann Arbor. The method and design of this survey have been described in detail elsewhere (Kessler et al., 2004). Briefly, in the NCS-R, 11,222 households were initially screened from a nationally representative multi-stage clustered area probability sample of households, with individuals who were institutionalized, did not speak English, or were living on military bases being excluded from this survey. Recruitment of households began by the interviewer mailing an advance letter and study fact brochure to the households (see Kessler et al., 2004, for more details). The advance letter said that the interviewer would make an in-person visit to the household within the next week to answer any remaining questions and to determine whether the household resident selected to participate would be willing to do so. Interviewers obtained verbal informed consent before the beginning of each interview. Recruitment and consent were approved by the Human Subjects Committees of Harvard Medical School, and the University of Michigan.

The NCS-R survey included two parts. Part I included a core diagnostic assessment and was administrated to all respondents (n = 9,282). Part II assessed additional disorders and other correlated and was administered to only some of part I respondents (n = 5,692), including all part I respondents with a lifetime disorder plus a probability subsample of other respondents.

2.2 | Measures

2.2.1 | Sociodemographic variables

Participants reported their gender, age, race–ethnicity, employment status, and marital status.
2.2.2 | Diagnostic interview

Participants were assessed for SAD and its onset, based on Version 3.0 of the World Health Organization Composite International Diagnostic Interview (WMH-CIDI; Kessler & Üstün, 2004), a fully structured lay-administered diagnostic interview. The WMH-CIDI includes a screening module and 40 sections that focus on diagnoses, functioning, treatment, risk factors, socio-demographic correlates, and methodological factors. Diagnoses were based on DSM-IV criteria (Diagnostic and Statistical Manual; American Psychiatric Association, 1994). The CIDI diagnoses were subsequently compared with clinical diagnoses based on the Structured Clinical Interview for DSM-IV (SCID; First, Spitzer, Gibbon, & Williams, 2002) in blind clinical re-interviews of a probability subsample of NCS-R respondents (Kessler et al., 2004) and results indicated that the SCID was in good concordance with the CIDI diagnoses for anxiety, mood, and substance use disorders1 (Kessler et al., 2005).

2.2.3 | Clinical presentation

Participants were administered the social anxiety section if they endorsed a diagnostic stem question for either a performance or an interactional fear that was excessive and caused substantial distress, nervousness, or avoidance. The social anxiety section assessed lifetime experiences of shyness, fear, or discomfort in 14 social situations (SO1B–SO1N2), such as talking in meetings, entering a room when others are present, and dating. Internal consistency for items tapping the potential feared situations was adequate (Cronbach’s α = .78). Participants endorsing one or more of these fears were asked about the age they first feared a social situation, and the age they first avoided a social situation (items SO3A and ASO6B1 respectively). Type of feared social situations, number of feared situations and severity of fear if faced with the most feared situation today (SO19) were compared among men and women with 12-months SAD. Different symptoms experienced in anxiety provoking situations (e.g., blush or shake; SO8A, SO9A, and SO10) were also compared.

2.2.4 | Distress and impairment

Participant reported their subjective distress, using a dichotomous item assessing whether they had ever felt emotionally upset, worried or disappointed of themselves due to social fears. General functional impairment caused by social anxiety was assessed by a single item (SP16: “How much did your social fears or avoidance ever interfere with either your work, your social life, or your personal relationships?”) rated using a 5-point Likert-type scale (1 = not at all, 2 = a little, 3 = some, 4 = a lot, and 5 = extremely). Functional impairment in the past month was also assessed by a single item (SO23) tapping the number of days in the past month participants were unable to do normal acts due to their social fears.

Impairment was also assessed in regard to the worst month of the disorder. Participants were asked about interference caused by social anxiety in the domains of home management, social life and close relationships during the past year when social anxiety was most severe (SO21A, SO21D, and SO21C, respectively). Each domain was self-rated using a 0–10 scale reflecting the extent to which social anxiety interfered with the participant’s ability to function in the domain. Internal consistency for impairment items was adequate (Cronbach’s α = .78).

2.2.5 | Treatment seeking

Lifetime and 12-months treatment for SAD symptoms were assessed. Specifically, participants reported the extent to which they (1) ever talked to a medical doctor or a professional about social fear (SO25); (2) received professional treatment for their social fear in the past 12-months (SO38); (3) ever received helpful treatment for social fear (SO36); and (4) ever been hospitalized overnight due to their social fear (SO39). In addition to these dichotomous items, participants were also asked to report the age in which they first saw a professional, received helpful treatment and were first hospitalized due to social fear was also compared (SO25A, SO36, and SO39A, respectively).
2.3 Analytic strategy

SPSS 23.0 was employed to analyze the data. When examining measures with several items we calculated Chronbach’s α to evaluate internal consistency. We compared men and women with 12-months SAD using t-tests when dependent variables were continuous and assumptions (i.e., independence of observations, normal distribution, and equal variances) were met. When assumptions were not met (e.g., non-normal distribution) we used the Mann–Whitney U test as a non-parametric alternative to the t-test as it does not assume normal distribution of variables. When dependent variables were categorical (i.e., when comparing frequencies), we conducted χ² tests. Cohen’s d was calculated as a measure of effect size for t-tests, and Kramer’s V was calculated as a measure of effect size for chi-square tests. Interpretations of effect sizes were based on Cohen’s (1988) criteria.

3 RESULTS

3.1 Prevalence and sociodemographic correlates

There were 1,143 participants who met criteria for lifetime SAD and 652 participants who met criteria for 12-months SAD. Women were more likely than men to suffer from both lifetime and 12-months SAD (see Table 1). Among participants with 12-months SAD, women were more likely to be divorced or widowed [χ²(1) = 9.9, p < .01; V = .24; n_women = 128, 31%, n_men = 47, 19.7%], whereas men were more likely to have never been married [χ²(1) = 7.63, p < .01; V = .21; n_women = 97, 23.5%, n_men = 80, 33.5%]. Men with 12-months SAD were more likely to be employed compared with women [χ²(1) = 6.17, p = .01; V = .12; n_women = 240, 58.4%, n_men = 163, 68.2%], whereas women with the disorder were more likely to be unemployed [χ²(1) = 12.87, p < .01; V = .64; n_women = 29, 7.1%, n_men = 2, 8%]. However, there was no gender difference found in the percentage of men and women with the disorder, which are not in the labor force [χ²(1) = .88, p = .35; V = .06; n_women = 142, 34.5%, n_men = 74, 31%]. Women with 12-months SAD were also slightly older (M = 40.43, SD = 14.97) than men with the disorder (M = 38.14, SD = 12.89; t(558.22) = −2.15, p = .03, d = .17). Finally, there were no significant gender differences in race [χ²(6) = 10.87, p = .09; V = .02].

3.2 Psychiatric comorbidity

Among individuals with 12-months SAD, men were more likely than women to have lifetime alcohol abuse and dependence, drug abuse and dependence and nicotine dependence (see Table 2). They were also more likely than women to have conduct disorder. Women were more likely than men to have specific phobia, generalized anxiety disorder (GAD) and PTSD (see Table 1). Women were also more likely to have experienced a panic attack in their lives [χ²(1) = 5, p = .03; V = .12; n_women = 248, 60%, n_men = 122, 51%]. Women reported having panic disorder and all mood disorders (except bipolar disorder) more than men, but these differences did not reach statistical significance (see Table 2).

Compared to women with 12-months SAD (M = .64, SD = 1.15), men with the disorder (M = 1.19, SD = 1.56) met lifetime criteria for a greater number of substance use disorders [t(388.44) = 4.74, p < .01; d = .40]. Compared to men with
TABLE 2  Lifetime comorbidity among men and women with 12-months social anxiety disorder (SAD)

<table>
<thead>
<tr>
<th>Lifetime comorbidity</th>
<th>Gender</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Males % (n)</td>
<td>Females % (n)</td>
<td>( \chi^2_{df} )</td>
<td>( p )</td>
</tr>
<tr>
<td>Nicotine dependence</td>
<td></td>
<td>19.7 (47)</td>
<td>13.3 (55)</td>
<td>4.62 (1)</td>
<td>.03</td>
</tr>
<tr>
<td>Alcohol abuse</td>
<td></td>
<td>38.1 (91)</td>
<td>19.9 (82)</td>
<td>25.78 (1)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Alcohol dependence</td>
<td></td>
<td>18.8 (45)</td>
<td>10.2 (42)</td>
<td>9.82 (1)</td>
<td>&lt;.01</td>
</tr>
<tr>
<td>Drug abuse</td>
<td></td>
<td>29.3 (70)</td>
<td>14.3 (59)</td>
<td>21.47 (1)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Drug dependence</td>
<td></td>
<td>13.4 (32)</td>
<td>6.8 (28)</td>
<td>7.92 (1)</td>
<td>&lt;.01</td>
</tr>
<tr>
<td>Major depressive episode</td>
<td></td>
<td>45.2 (108)</td>
<td>51.3 (212)</td>
<td>2.29 (1)</td>
<td>.13</td>
</tr>
<tr>
<td>Major depressive disorder</td>
<td></td>
<td>34.7 (83)</td>
<td>37.5 (155)</td>
<td>.51 (1)</td>
<td>.47</td>
</tr>
<tr>
<td>Bipolar I disorder</td>
<td></td>
<td>5.4 (13)</td>
<td>4.8 (20)</td>
<td>.11 (1)</td>
<td>.74</td>
</tr>
<tr>
<td>Bipolar II disorder</td>
<td></td>
<td>4.6 (11)</td>
<td>7.7 (32)</td>
<td>2.43 (1)</td>
<td>.12</td>
</tr>
<tr>
<td>Dysthymia</td>
<td></td>
<td>15.5 (37)</td>
<td>19.1 (79)</td>
<td>1.38 (1)</td>
<td>.24</td>
</tr>
<tr>
<td>Panic disorder</td>
<td></td>
<td>16.7 (40)</td>
<td>19.6 (81)</td>
<td>.83 (1)</td>
<td>.36</td>
</tr>
<tr>
<td>Specific phobia</td>
<td></td>
<td>36 (86)</td>
<td>48.9 (202)</td>
<td>10.26 (1)</td>
<td>&lt;.01</td>
</tr>
<tr>
<td>Generalized anxiety disorder</td>
<td></td>
<td>22.6 (54)</td>
<td>31.2 (129)</td>
<td>5.6 (1)</td>
<td>.02</td>
</tr>
<tr>
<td>Posttraumatic stress disorder</td>
<td></td>
<td>12.1 (29)</td>
<td>28.1 (116)</td>
<td>22.28 (1)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Conduct disorder</td>
<td></td>
<td>15.9 (38)</td>
<td>9.2 (38)</td>
<td>6.6 (1)</td>
<td>.01</td>
</tr>
</tbody>
</table>

Note. Values in bold are statistically significant (\( p < 0.05 \))

12-months SAD (\( M = .87, SD = 1.02 \)), women met lifetime criteria for a greater number of anxiety disorders [\( M = 1.28, SD = 1.11; t_{(650)} = -4.62, p < .001, d = .38 \)].

3.3 Clinical presentation

Compared to men with 12-months SAD, women with the disorder were more likely to fear taking an important exam even though they were ready, working while someone is watching, entering a room when others are present, writing, eating, or drinking while others are watching, using public bathrooms and disagreeing with people they do not know well (see Table 3). Women with 12-months SAD also endorsed a greater number of lifetime social fears (\( M = 9.89, SD = 3.11 \)) compared to men with the disorder (\( M = 9.01, SD = 3.12; t_{(607)} = -3.35, p < .01, d = .28 \)) as well as reported more severe social fear if faced with their most feared social situation today (\( \chi^2_{(1)} = 7.03, p < .01; V = .22; n_{women} = 102, 24.8\%; n_{men} = 38, 15.9\% \)). Compared to men with 12-months SAD, women with the disorder were more likely to blush or shake during an anxiety provoking social situation (\( \chi^2_{(1)} = 5.2, p = .02; V = .1; n_{women} = 348, 65.4\%; n_{men} = 184, 34.6\% \)), to feel their heart pounding (\( \chi^2_{(1)} = 4.6, p = .03; V = .32; n_{women} = 26, 57.8\%; n_{men} = 19, 42.2\% \)), and to fear having a panic attack during an anxiety provoking social situation (\( \chi^2_{(1)} = 6.77, p < .01; V = .15; n_{women} = 200, 68.7\%; n_{men} = 91, 31.1\% \)).

3.4 Subjective distress and functional impairment

Compared to men with 12-months SAD (84.9\%), women with the disorder (90.6\%) were more likely to report being emotionally upset, worried or disappointed of themselves due to social fears or avoidance (\( \chi^2_{(1)} = 4.7, p = .03; V = .2; n_{women} = 375, 64.8\%; n_{men} = 203, 35.2\% \)). No significant gender differences were found in general functional impairment (\( \chi^2_{(4)} = 1.26, p = .87; V = .002 \)). However, there were some differences found in functional impairment during the worst month of the disorder in the past year, such that compared to men with 12-months SAD (\( M = 1.91, SD = 2.71 \)), women with the disorder reported greater impairment in home management (\( M = 2.72, SD = 3.34; t_{(435.56)} = -3, p < .01 \),...
### Table 3
Fear in specific social situations among men and women with 12-months social anxiety disorder (SAD)

<table>
<thead>
<tr>
<th>Social situations</th>
<th>Gender</th>
<th></th>
<th></th>
<th></th>
<th>Effect size (Cramer’s V)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Males % (n)</td>
<td>Females % (n)</td>
<td>(X^2_{(df)})</td>
<td>(p)</td>
<td></td>
</tr>
<tr>
<td>Meeting new people</td>
<td>82.8 (198)</td>
<td>82.8 (341)</td>
<td>.001</td>
<td>.98</td>
<td>0</td>
</tr>
<tr>
<td>Talking to authority</td>
<td>71.5 (171)</td>
<td>75.5 (311)</td>
<td>1.22 (1)</td>
<td>.27</td>
<td>.05</td>
</tr>
<tr>
<td>Talking in meetings\class.</td>
<td>86.6 (207)</td>
<td>86 (355)</td>
<td>.05 (1)</td>
<td>.82</td>
<td>0</td>
</tr>
<tr>
<td>Parties and social gatherings.</td>
<td>86.5 (163)</td>
<td>70 (287)</td>
<td>.16 (1)</td>
<td>.69</td>
<td>.02</td>
</tr>
<tr>
<td>Performing in front of an audience.</td>
<td>88.6 (209)</td>
<td>90.7 (369)</td>
<td>.73 (1)</td>
<td>.39</td>
<td>.04</td>
</tr>
<tr>
<td>Taking an important exam though being ready.</td>
<td>64.9 (155)</td>
<td>74.9 (305)</td>
<td>7.46 (1)</td>
<td>&lt;.01</td>
<td>.13</td>
</tr>
<tr>
<td>Working while someone watches.</td>
<td>56.1 (134)</td>
<td>70.6 (290)</td>
<td>14 (1)</td>
<td>&lt;.001</td>
<td>.18</td>
</tr>
<tr>
<td>Entering a room when others are present.</td>
<td>59.8 (143)</td>
<td>70.5 (291)</td>
<td>7.68 (1)</td>
<td>&lt;.01</td>
<td>.13</td>
</tr>
<tr>
<td>Talking to people you don’t know well.</td>
<td>68.6 (164)</td>
<td>68.3 (282)</td>
<td>.01 (1)</td>
<td>.93</td>
<td>0</td>
</tr>
<tr>
<td>Disagree with people don’t know well.</td>
<td>53.8 (238)</td>
<td>67.8 (410)</td>
<td>12.66 (1)</td>
<td>&lt;.001</td>
<td>.14</td>
</tr>
<tr>
<td>Write/eat/drink while other watches</td>
<td>36 (86)</td>
<td>54.2 (224)</td>
<td>20.23 (1)</td>
<td>&lt;.001</td>
<td>.26</td>
</tr>
<tr>
<td>Using public bathroom</td>
<td>26.4 (63)</td>
<td>34.6 (143)</td>
<td>4.79 (1)</td>
<td>.03</td>
<td>.15</td>
</tr>
<tr>
<td>Dating situation</td>
<td>65.8 (152)</td>
<td>59.1 (234)</td>
<td>2.78 (1)</td>
<td>.1</td>
<td>.09</td>
</tr>
<tr>
<td>Being in the center of attention</td>
<td>74.7 (177)</td>
<td>80.8 (333)</td>
<td>3.37 (1)</td>
<td>.07</td>
<td>.08</td>
</tr>
</tbody>
</table>

Note. Values in bold are statistically significant (\(p < .05\))

### Table 4
Treatment seeking among men and women with 12-months social anxiety disorder (SAD)

<table>
<thead>
<tr>
<th>Treatment seeking</th>
<th>Gender</th>
<th></th>
<th></th>
<th>Effect size (Cramer’s V)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Males % (n)</td>
<td>Females % (n)</td>
<td>(X^2_{(df)})</td>
<td>(p)</td>
</tr>
<tr>
<td>Ever talked to medical doctor or a professional about social fear</td>
<td>29.7 (71)</td>
<td>39.7 (164)</td>
<td>6.6 (1)</td>
<td>.01</td>
</tr>
<tr>
<td>Received professional treatment for social fear in past 12-months</td>
<td>40.8 (29)</td>
<td>52.8 (86)</td>
<td>2.81 (1)</td>
<td>.09</td>
</tr>
<tr>
<td>Ever received helpful treatment for social fear</td>
<td>60.6 (43)</td>
<td>59.8 (98)</td>
<td>.01 (1)</td>
<td>.91</td>
</tr>
<tr>
<td>Ever been hospitalized overnight due to social fear</td>
<td>11.3 (8)</td>
<td>9.8 (16)</td>
<td>.12 (1)</td>
<td>.73</td>
</tr>
</tbody>
</table>

Note. Values in bold are statistically significant (\(p < .05\))

\[d = .27\], but not in their social lives \([t_{(399.03)} = 1.02, p = .31, d = .09]\) and their close relationships \([t_{(409.14)} = .07, p = .95, d = .006]\).

### 3.5 Age of onset

Men and women with 12-months SAD reported similar ages of onset (Median Age = 11, 12 respectively) and the difference was not statistically significant \((U = 45.206, p = .07, \eta^2 = .005)\). There were also no significant differences found in the age in which men \((MD = 11)\) and women \((MD = 12)\) with 12-month SAD experienced their first fear in a social situation \((U = 21.352.5, p = .19, \eta^2 = .003)\), and in the age in which men \((MD = 13)\) and women \((MD = 14)\) with 12-months SAD first avoided a social or performance situation \((U = 26.812, p = .12, \eta^2 = .004)\).

### 3.6 Treatment seeking

Compared to men with 12-months SAD, a higher percentage of women with the disorder reported talking to a medical doctor or a professional about their social fears (see Table 4). However, men and women with the disorder were equally...
likely to have received professional treatment for their social fear in the past 12 months, and to have ever received helpful treatment for these fears. Men and women were also equally likely to have ever been hospitalized overnight due to their social fears. There were no significant differences found in the age in which men ($M = 28.00, SD = 11.84$) and women ($M = 28.62, SD = 11.65$) first saw a professional for their social fear [$t_{(230)} = −.34, p = .34, d = .05$], in the age in which men ($M = 30.14, SD = 11.14$) and women ($M = 30.74, SD = 10.44$) first received helpful treatment for these fears [$t_{(138)} = −.31, p = .76, d = .06$], and in the age in which men ($M = 23.43, SD = 10.05$) and women ($M = 8.82, SD = 2.21$) were first hospitalized overnight due to their social fears [$t_{(21)} = −.36, p = .72, d = .16$].

4 | DISCUSSION

The present study examined gender differences in SAD in the NCS-R—a large, nationally representative sample of the U.S. population. Specifically, we examined gender differences in prevalence, patterns of comorbidity, and clinical presentation (i.e., number of social fears, type of fears) with explicit hypotheses, and explored differences in subjective distress and functional impairment, age of onset, and treatment seeking without explicit hypotheses due to the paucity of research in these domains.

According to our first hypothesis (H1) we found a higher prevalence of 12-months SAD in women compared with men. This finding is in line with previous studies (e.g., Mackenzie & Fowler, 2013; Xu et al., 2012), which have consistently found higher prevalence rates for women compared with men. Our findings are in contrast to a single study that found no gender differences in SAD prevalence (McLean et al., 2011). However, it is important to note that the null findings in that study were found when using a Bonferroni correction accounting for 20 comparisons (i.e., critical level for significance $= .0025$) and controlling for socioeconomic status (SES), education level, age, and race. Both Bonferroni correction and the practice of including multiple covariates in regression analyses have been criticized for significantly reducing statistical power (e.g., Perneger, 1998; Tabachnick & Fidell, 2013) suggesting that interpretation of these null findings should be done with caution.

Importantly, diagnoses in the NCS-R were based on DSM-IV criteria, rather than current DSM-5 criteria (American Psychiatric Association, 2013). Specifically, relevant changes between versions in SAD diagnosis included the addition of a 6-month duration for the disorder, and a change in the criterion regarding the individual’s awareness that the fear is irrational and out of proportion. In the DSM-5 version, this criterion specifies that the fear is exaggerated in relation to sociocultural context and the individual does not necessarily need to be aware of the disproportion. The change in duration may lead to a reduction in diagnosis of SAD in the current version as it limits the diagnosis to cases in which the disorder is present for at least 6 months. The second criterion may actually lead to an increase in SAD diagnosis as it removes the necessity for awareness of irrationality or exaggeration. Importantly, there are no data on potential gender differences in the effects of these changes. Thus, we cannot accurately gauge the effects of these changes on gender differences in SAD. Future studies are needed to shed light on this issue.

Our findings provided partial support for hypotheses regarding patterns of comorbidity (H2a and H2b). Specifically, according to our hypothesis (H2a) women had more comorbid internalizing disorders as indicated by higher prevalence rates of specific phobia, GAD, and PTSD compared with men, and these effects were in the small to medium range. However, in contrast with our hypothesis (H2a), women did not have higher prevalence rates of panic disorder and mood disorders compared with men. In addition, according to our hypothesis (H2b), men had significantly higher prevalence rates of all comorbid externalizing disorders included in the present study compared with women and these effects were medium in size. These findings are mostly consistent with previous studies (e.g., Xu et al., 2012; Yonkers et al., 2001), which found that men with SAD are more likely to suffer from comorbid externalizing disorders, whereas women with SAD were more likely to suffer from comorbid internalizing disorders. These gender differences in internalizing/externalizing may not be specific to patterns of comorbidity among individuals with primary SAD but may rather represent a general tendency of men and women for externalizing and internalizing respectively (e.g., Kessler et al., 2005).
Importantly, in contrast to our hypothesis (H2a) we did not find a significant gender difference in comorbidity of major depressive episodes, MDD, and dysthymia, as well as in panic disorder. This is also in contrast to previous studies which found such significant differences (e.g., Mackenzie & Fowler, 2013). This inconsistency may be the result of differences in the type of SAD diagnosis used in different studies. Whereas the present study examined gender differences among men and women with 12-months SAD, previous studies examined gender differences among men and women with lifetime SAD (e.g., Mackenzie & Fowler, 2013; Xu et al., 2012). Thus, it is possible that gender differences in comorbidity of mood disorders and panic disorder may be evident when examining individuals with lifetime SAD, but not individuals with 12-months SAD. One possible explanation for this is that mood disorders typically follow the onset of SAD rather than precede it, making differences in mood disorders more difficult to detect among individuals with 12-months SAD (e.g., Fava et al., 2000). However, much more research is needed to better understand these differences.

Our findings indicated that women endorse a greater number of social fears compared with men. This is consistent with our hypothesis (H3) as well as with previous studies (Xu et al., 2012). This suggests that women may have a more severe clinical presentation and that their anxiety is more generalized.

As these findings are based on self-report, it is important to consider whether they reflect gender differences in reporting anxiety, rather than gender differences in the experience of anxiety. However, recent empirical findings do not provide support for reporting bias. Research on gender differences in physiological arousal has consistently found heightened arousal in women with SAD compared with non-socially anxious women, but not in men with SAD, suggesting that women with SAD may experience anxiety to a greater extent (e.g., Alvares et al., 2013). Moreover, recent experimental studies have failed to find support for underreporting of anxiety among men (e.g., McLean & Hope, 2010). In that study, participants took part in an anxiety-provoking task. Half of the participants were connected to sham physiological equipment and told that the physiological measures would “verify” their true level of anxiety. The other half were similarly connected but were told the measurement is irrelevant to the current experiment. No differences in reporting of anxiety were found between the two conditions, but as expected, women reported greater anxiety and evidenced greater avoidance compared with men. Thus, although it certainly remains possible that reporting bias contributes to observed gender differences, empirical evidence suggests this effect may not be pronounced.

Our findings regarding comparable functional impairment among men and women with 12-months SAD differ from those reported in previous epidemiological studies indicating lower levels of psychosocial functioning in women with SAD (Xu et al., 2012). This discrepancy may be due in part to differences in the self-report measures used in both studies. Whereas functional impairment items in the present study focused on impairment specifically due to social anxiety, the functional impairment measure used in Xu et al. (2012) is more general and assesses health-related quality of life which may stem from myriad disorders and is not specific to social anxiety (The Short Form-12y2; Ware, Kosinski, & Keller, 1996). Thus, it is possible that gender differences in functional impairment found in previous studies are the result of higher levels of comorbid depression among women with SAD, whereas the present study found no gender differences in depression among individuals with 12-months SAD and no gender differences in impairment.

It is also important to note, that whereas we found no differences in functional impairment between men and women, some socio-demographic characteristics suggest that men and women may have different patterns of impairment (albeit having similar overall levels of impairment). Specifically, men were more likely to have never been married compared with women, and women were more likely to be divorced or widowed compared with men. Thus, men may experience greater difficulties in forming romantic relationships, whereas women may experience greater difficulties in maintaining them. In addition, women were more likely to be unemployed compared with men, and this mirrors the findings of MacKenzie and Fowler (2013) who found that women experience greater functional impairment in work compared with men. Future studies can examine patterns of impairment as well as overall level of impairment to increase our understanding of these issues.

Our findings indicated that men and women with SAD have similar ages of onset as well as similar rates of treatment seeking. These findings mirror those of previous epidemiological studies (e.g., Xu et al., 2012). Importantly, the null findings regarding gender differences in treatment seeking may actually represent a divergence from patterns reported in other anxiety disorders, in which women seek treatment to a greater extent than men (Shear, Feske, & Greeno, 2000). More research is needed to better understand this unique pattern of treatment seeking in SAD.
The finding that women are more likely to have SAD, and demonstrate greater clinical severity compared with men, can be understood in the context of self-construal theory (Cross & Madson, 1997). According to this theory, men and women construe themselves differently: men tend to construct and maintain an independent self-construal in which others are represented as separate from the self, whereas women tend to construct and maintain an interdependent self-construal, in which others are represented as part of the self (Markus & Kitayama, 1991). Self-construal theory has received ample empirical support (see Cross, Hardin, & Gercik-Swing, 2011, for a comprehensive review). For instance, in a series of studies with over 1,200 participants, women were found to define themselves as higher in relational interdependence and men higher in agency and independence (Guimond, Chatard, Martinot, Crisp, & Redersdorff, 2006). It is possible then that these gender differences in self-construals could potentially lead to elevated social anxiety among women compared with men. Specifically, because women may construe their self as being interdependent to a greater extent than men, they may be more reactive to the status of their relationships with others, and may experience more anxiety regarding the consequences of interpersonal interactions. This could lead women to fear more types of social situations, report higher levels of fear and anxiety symptoms, and ultimately have higher rates of SAD compared with men.

The present study has several limitations. First, given the nature of a large-scale survey, all findings are based on self-report and may be vulnerable to reporting bias. Although our findings are consistent with more implicit physiological data (e.g., Alvares et al., 2013), this issue still requires careful consideration. Second, although this study points to a number of observed gender differences in SAD, the reasons underlying these differences cannot be inferred, and explanations remain speculative and require experimental support. Third, the NCS-R dataset included DSM-IV diagnoses rather than current DSM-5 diagnoses. Thus, generalizability to current definitions should be done with caution. However, it is important to note that differences between the versions in SAD diagnosis are very modest. Fourth, due to the cross-sectional nature of the NCS-R, we were unable to examine gender differences in the course of SAD, and specifically in chronicity and processes of change. Finally, data regarding adolescents were not available in the NCS-R. This is especially important given that some gender differences in SAD have been found to be more pronounced among adolescents (American Psychiatric Association, 2013).

5 | CONCLUSIONS AND IMPLICATIONS FOR ASSESSMENT AND TREATMENT OF SAD

The present study systematically examined gender differences in SAD in a large epidemiological sample and our findings have implications for both assessment and treatment of SAD. Implications for assessment include using knowledge regarding different situations feared by men and women to guide intake and treatment planning. In addition, due to gender differences in severity of clinical presentation, setting gender-specific thresholds for clinical levels may be considered. Implications for treatment include tailoring psychoeducation to men and women. For instance, normalizing the experience of women by noting the high levels of social anxiety experienced by women and their enhanced physiological responses. In addition, data regarding gender differences in feared situations and severity of social fears can help tailor exposures specifically for men and women (e.g., suggest to conduct exposures to observational fears for women more than men). In addition, if therapists have exposures they suggest or use often, they can benefit from being aware that women and men may experience these exposures differently.

There has been a paucity of research on gender differences in SAD. Findings from the present study indicate that women are more likely to have SAD and demonstrate a more severe clinical presentation compared with men. Existing treatments can use information on feared situations of men and women to inform decisions regarding exposure exercises, thus facilitating gender-sensitive treatment.

NOTES

1 Concordance in this study was based on odds ratios, Kappas, area under ROC curve, McNemar chi-square test, sensitivity, specificity, and positive and negative predictive value.
2 Refers to items in the NCS-R codebook (Alegria, Jackson, Kessler, & Takeuchi, 2001).

ORCID
Maya Asher http://orcid.org/0000-0003-4668-704X

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