Sexual Function and Behavior in Social Phobia

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Background: Social phobia is a type of performance and interpersonal anxiety disorder and as such may be associated with sexual dysfunction and avoidance. The aim of the present study was to evaluate sexual function and behavior in patients with social phobia compared with mentally healthy subjects.

Method: Eighty subjects participated in the study: 40 consecutive, drug-free outpatients with social phobia (DSM-IV) attending an anxiety disorders clinic between November 1997 and April 1999 and 40 mentally normal controls. The Structured Clinical Interview for DSM-IV Axis I Disorders and the Liebowitz Social Anxiety Scale were used to quantitatively and qualitatively assess sexual function and behavior.

Results: Men with social phobia reported mainly moderate impairment in arousal, orgasm, sexual enjoyment, and subjective satisfaction domains. Women with social phobia reported severe impairment in desire, arousal, sexual activity, and subjective satisfaction. In addition, compared with controls, men with social phobia reported significantly more frequent paid sex ($p < .05$), and women with social phobia reported a significant paucity of sexual partners ($p < .05$).

Conclusion: Patients with social phobia exhibit a wide range of sexual dysfunctions. Men have mainly performance problems, and women have a more pervasive disorder. Patients of both genders show difficulties in sexual interaction. It is important that clinicians be aware of this aspect of social phobia and initiate open discussions of sexual problems with patients.

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Social phobia, or social anxiety disorder, is considered the most common of the anxiety disorders, with a reported lifetime prevalence of 4%[1] to 7%.[2] The lifetime prevalence of social phobia appears to have increased in recent years.[3] The DSM-IV[4] defines social anxiety disorder as a fear of one or more social or performance situations in which the person is exposed to unfamiliar people or to possible scrutiny by others. Affected individuals fear that they will act in a way that will be humiliating or embarrassing to them. Social phobia has been found to significantly lower quality of life and work productivity and to adversely affect long-term social, family, and romantic relationships.[5,6]

One possible area of impairment associated with social phobia that has not been thoroughly studied is sexual function. Although the psychoanalytic literature has directed much attention to the association of anxiety provoked by intrapsychic conflicts and sexual dysfunction,[7] there is little information on the comorbidity of sexual dysfunction and anxiety disorders.[8,9] Kaplan[8] claimed that the role of anxiety is especially clear in the pathogenesis of sexual aversion disorders and phobic avoidance of sex. She found an unexpectedly high incidence of panic disorder in patients who phobically avoid sex or who complain of active sexual aversion. Apart from their anxiety symptoms, the patients often displayed a triad of separation anxiety, rejection sensitivity, and overreaction to criticism. The last 2 symptoms can be easily attributed to social phobia. Some of the patients actually experienced panic about their sexual performance or became obsessed about details concerning their sexual performance and losing control. Accordingly, Monteiro et al.[9] found a high percentage of sexual pathology in untreated patients with obsessive-compulsive disorder (OCD) of whom up to 24% were virgins and another 9% had not been sexually active for years. It is interesting that 7 of the 25 patients who reported sexual problems also suffered from extreme shyness, raising the possibility of social phobia comorbidity with OCD.

Heimberg and Barlow[10] hypothesized that sexual dysfunction (especially reduced erection) is a result of performance anxiety or fear of scrutiny by others, similar to social phobia. Using a laboratory model, they found that healthy men exposed to both erotic stimuli and anxiety-provoking stimuli showed increased arousal compared

with healthy men exposed to erotic stimuli alone. However, in sexually dysfunctional males, the opposite occurred: they reacted to the anxiety-provoking stimuli with decreased arousal. The authors concluded that anxiety apparently affects sexually functional and dysfunctional males in opposite ways and that dysfunctional males may employ the same cognitive model as patients with social phobia.

Several studies suggest that patients with social phobia may have sexual problems. Ernst et al.[11] found that sexual disturbances in young adults were associated with anxiety and depression and, in women, also with social phobia and eating disorders. In a study of college students, Leary and Dobbins[12] reported that subjects with a high rate of "heterosocial anxiety" showed a higher incidence of sexual dysfunction. Similarly, Koponen et al.[13] examined 32 patients with social phobia, most of them women, of whom 25% showed diminished sexual desire and 22% had orgasmic dysfunction. According to these findings, social phobia, as a type of anxiety disorder, or even as a subtype of performance anxiety disorder, may be associated with sexual dysfunction and behavior.

The aim of the present study was to quantitatively and qualitatively evaluate sexual function and behavior in patients with social phobia compared with healthy subjects. According to the study by Koponen et al.,[13] we hypothesized that both men and women with social phobia have difficulties in all domains of sexual function (desire, arousal, performance, and orgasmic function), but especially in performance, and also in interpersonal sexual behaviors.

METHOD

The initial study group consisted of 41 individuals with social phobia, 24 men and 17 women, consecutively referred to our outpatient anxiety clinic from November 1997 to April 1999. Ages ranged from 20 to 50 years. None of the patients had a known physical disease or suffered from alcohol or drug abuse. All had been medication-free for at least 12 weeks at the time of their assessment, which took place just after their referral to the clinic. The diagnosis of social phobia met DSM-IV criteria[4]; symptoms had existed for at least 5 years in all cases. Patients were also evaluated with the Structured Clinical Interview for DSM-IV Axis I Disorders, Patient Version (SCID-P),[14] and the Liebowitz Social Anxiety Scale (LSAS).[15] One woman who met the criteria for major depression according to the SCID was excluded, so the final study group numbered 40 patients.

For purposes of the study, patients were also assessed with the following instruments: Montgomery-Asberg Depression Rating Scale,[16] the Sheehan Disability Scale,[17] and the Clinical Global Impressions scale.[18] Sexual function was assessed with the modified questionnaire of Schiavi et al.,[19] which consists of 17 items for males and 14 items for females. Items are grouped into 6 psychosexual domains according to sexual cycle, relevant to each sex. Response choices are different for each item as shown in Tables 1 through 4. Patients were also asked about their sexual history and behavior. Participants who did not have a sexual partner at the time of the study were asked about their most recent sexual relationship; if the last relationship had occurred more than 5 years previously, the patients were asked only about sexual history, desire, and masturbation.

The control group consisted of 40 subjects: 20 hospitalized in the adjacent general hospital for minor operations (hernioplasty, appendectomy, etc.) and 20 volunteer medical students and paramedical staff. All were interviewed by a psychiatrist (SCID-P), and none had current or past psychopathology. To avoid cultural differences that could affect sexual habits, we included only participants who were nonreligious Jews and were born in Israel. The study was approved by the Geha Hospital (Petah Tiqva, Israel) Helsinki Committee. All participants signed an informed consent form after the nature of the study was fully explained to them.

Statistical Analysis

One-way or 2-way analyses of variance (ANOVAs) were used to study the effect of social phobia on sexual function, and the chi-square test was used for nonparametric variables. Continuous data are given as mean ± SD.

RESULTS

The age distribution by sex was similar in the 2 groups: men = 31.5 ± 7.5 years in the social phobia group, 31.0 ± 7.5 years in the control group; women = 31.4 ± 7.4 years and 31.4 ± 4.0 years, respectively. Level of education was also similar: 13.3 ± 1.8 years and 13.0 ± 4.0 years for the social phobia group and control group, respectively.

No statistically significant difference was found between the social phobia and control groups in marital status or heterosexual relationships. In the social phobia group, 40% (N = 16) were married and 55% (N = 22) had a stable relationship; in the control group, 58% (N = 23) were married and 72% (N = 29) were in a stable relationship (married: $\chi^2 = 1.0$, df = 1, p = .18; stable relationship: $\chi^2 = 1.9$, df = 1, p = .16). The LSAS scores in men were 59 ± 15 for anxiety and 56 ± 11 for avoidance, and in women, 67 ± 11 for anxiety and 61 ± 15 for avoidance. No significant difference was found between men and women in LSAS scores.

According to the Sheehan scores, men reported that social phobia interferes mostly with their social performance (8.5 ± 1.3) and moderately within the family and at work (5.0 ± 3.3 and 6.5 ± 3.1, respectively). Women

Table 1. Sexual Function Scores in 24 Men With Social Phobia and 24 Mentally Normal Controls[a]

Psychosexual Variable	Rating	Social Phobia Mean	Social Phobia SD	Control Mean	Control SD	One-Way ANOVA F	One-Way ANOVA p Value
Desire							
Frequency of sexual thoughts	1 = never, 8 = daily	7.00	1.41	7.41	0.97	1.41	.24
Maximum time comfortable without sex	1 = > 1 year, 4 = < 1 week	3.33	0.70	3.45	0.50	0.49	.48
Frequency of desire for sex	1 = never, 8 = daily	5.91	1.76	6.66	1.00	3.26	.77
Arousal							
Degree of coital erections	1 = none, 10 = rigid	8.82	1.88	9.31	1.06	1.91	.17
Degree of sleep erections	1 = none, 10 = rigid	7.21	3.38	8.65	2.14	2.95	.93
Degree of masturbatory erections	1 = none, 10 = rigid	9.42	0.92	9.54	0.80	0.19	.66
Ease of arousal	1 = do not, 5 = very easily	4.45	0.65	4.87	0.44	6.57	< .01
Frequency of waking erections	1 = none, 8 = daily	5.40	2.36	5.34	2.62	0.66	.42
Sexual activity							
Frequency of coitus	1 = never, 8 = daily	5.05	1.73	5.87	1.70	2.52	.12
Frequency of masturbation	1 = never, 8 = daily	4.70	2.60	3.50	1.90	0.19	.66
Orgasmic function							
Frequency of orgasm during sex	1 = never, 7 = every time	6.62	0.87	7.00	0.00	4.03	.05
Sexual satisfaction							
Enjoyment of sex with partner	1 = not enjoyable, 7 = very enjoyable	5.30	1.80	6.59	0.85	8.28	.06
Satisfaction with own sexual function	1 = dissatisfied, 7 = satisfied	4.91	2.26	6.16	1.37	18.75	.02

[a]Abbreviation: ANOVA = analysis of variance.

reported the highest interference of the social phobia in their occupational and social life (8.0 ± 1.8 and 7.8 ± 2.0, respectively) and only minor interference in their family life (3.8 ± 3.7). No statistically significant difference was found in these factors between the men and women with social phobia.

The sexual function scores are presented in Tables 1 and 2 for men and in Tables 3 and 4 for women. The following list summarizes the findings for each variable.

Desire. As a whole, patients with social phobia had sexual thoughts significantly less frequently than the healthy controls ($p < .05$). Separate analysis by sex yielded a significant difference only for women ($p < .001$) (Table 3). The frequency of desire for sex was also significantly reduced only in the women with social phobia compared with the healthy women ($p < .001$) (Table 3).

Arousal. The difference between the groups in degree of arousal, as manifested by coital erections in men and lubrication in women, was of borderline significance for the women only ($p = .05$), although the ease of sexual arousal was significantly reduced in both social phobic men ($p < .01$) and women ($p < .001$).

Sexual activity. The frequency of coitus was significantly diminished in the women with social phobia compared with controls ($p < .01$), but not in the men with social phobia. The difference in the frequency of orgasm during sex was of borderline significance for men only ($p < .05$). Scores for masturbatory activity did not differ between patients with social phobia and controls.

Orgasmic function. Frequency of orgasm in men with social phobia was reduced compared with controls ($p < .05$).

Sexual satisfaction. The difference from controls in enjoyment of sex was of borderline significance for men ($p = .06$), and the difference in satisfaction with own sexual performance was significant for both men ($p < .05$) and women ($p < .001$).

Table 2. Sexual Performance in Men With Social Phobia and Mentally Normal Controls (sexually active in the last 5 years)[a]

Sexual Performance[b]	Social Phobia	Control	χ^2	p Value
Loss of erection during sex	2/21 (10%)	1/22 (5%)	0.3	NS
Loss of sexual desire during sex	7/21 (33%)	2/22 (9%)	3.5	.06
Premature ejaculation	7/21 (33%)	3/22 (14%)	2.3	NS
Retarded ejaculation	7/21 (33%)	1/22 (5%)	5.8	.02

[a]Abbreviation: NS = nonsignificant.
[b]The response choices for each item are dichotomized to yes or no.

When asked about gender-specific sexual problems, men with social phobia reported more events of retarded ejaculation than controls ($p < .05$) and more events of loss of desire during intercourse (borderline significance, $p = .06$). Women with social phobia reported more pain during coitus ($p < .05$) and more loss of desire during intercourse ($p < .05$) compared with controls (Table 4).

Sexual history and behavior are presented in Table 5. Women with social phobia reported significantly fewer sexual partners in the past than control women ($p < .05$). Furthermore, the proportion of women with social phobia who had had only 1 sexual partner in the past or none at all (i.e., no full sexual experience) was significantly higher than that in the control group ($p < .05$). In the control group, all the women had sexual experience. In men with social phobia, the initial sexual relationship occurred at an older age compared with the control group ($p < .001$), and the frequency of paid sex was significantly higher ($p < .05$). Interestingly, some (21% [N = 5]) of

Table 3. Sexual Function Scores in 16 Women With Social Phobia and 16 Mentally Normal Controls[a]

Psychosexual Variable	Rating	Social Phobia Mean	Social Phobia SD	Control Mean	Control SD	One-Way ANOVA F	One-Way ANOVA p Value
Desire							
Frequency of sexual thoughts	1 = never, 8 = daily	4.75	1.65	6.60	0.88	15.95	< .001
Maximum time comfortable without sex	1 = > 1 year, 4 = < 1 week	2.42	1.08	3.00	0.81	2.68	.11
Frequency of desire for sex	1 = never, 8 = daily	4.00	1.82	6.00	0.89	15.48	< .001
Arousal							
Degree of coital lubrication	1 = none, 10 = lubrication	7.70	2.30	9.12	1.20	4.04	.05
Degree of masturbatory lubrication	1 = none, 10 = lubrication	7.25	2.65	7.35	2.89	0.07	.93
Ease of arousal	1 = do not, 5 = very easily	2.26	1.90	4.50	0.63	17.95	< .001
Sexual activity							
Frequency of coitus	1 = never, 8 = daily	4.06	1.98	5.93	0.77	12.30	< .01
Frequency of masturbation	1 = never, 8 = daily	3.00	2.33	3.20	1.47	0.74	.78
Orgasmic function							
Frequency of orgasm during sex	1 = never, 7 = every time	4.76	2.58	5.93	1.43	2.37	.13
Sexual satisfaction							
Enjoyment of sex with partner	1 = not enjoyable, 7 = very enjoyable	5.38	1.55	6.00	1.15	1.49	.23
Satisfaction with own sexual function	1 = dissatisfied, 7 = satisfied	3.87	2.15	5.80	1.14	9.43	< .001

[a]Abbreviation: ANOVA = analysis of variance.

Table 4. Sexual Performance in Women With Social Phobia and Mentally Normal Controls (sexually active in the last 5 years)[a]

Sexual Performance[b]	Social Phobia	Control	χ^2	p Value
Pain during sex	5/12 (42%)	1/16 (6%)	5.1	.02
Loss of sexual desire during sex	6/13 (46%)	1/16 (6%)	6.2	.01
Retarded orgasm	5/13 (38%)	5/16 (31%)	0.2	NS

[a]Abbreviation: NS = nonsignificant.
[b]The response choices for each item are dichotomized to yes or no.

the men with social phobia experienced only paid sex, whereas none did so in the control group ($p < .05$). Reanalyzing the data concerning the age at first sexual relationships of men with social phobia using 2-way ANOVA revealed significantly older age in patients compared with control males ($F = 6.29$, $df = 1$, $p = .01$). No such difference was observed in women with social phobia. No gender effect was observed in the social phobia group in other sexual function domains.

Women with social phobia reported a higher rate of sexual abuse in childhood and adulthood than control women, although this finding was not statistically significant (31% [N = 5] vs. 13% [N = 2]).

DISCUSSION

The major finding of this study is that social phobia is associated with and complicated by poor sexual performance, marked avoidance of sexual activity, and change in sexual behavior. It is important that clinicians be aware of this aspect of social phobia and initiate open discussions of sexual problems with patients.

Men with social phobia had significantly more difficulty than controls in reaching erection during intercourse. They reported loss of desire during sex, less frequent orgasms, and more frequent retarded ejaculations. As a result, their overall enjoyment of sex and satisfaction from their sexual performance were markedly reduced. Affected women had less desire for sex than controls, marked difficulty in arousal (manifested by less lubrication), more pain during sex, and loss of desire during sex. As a result, they had sexual relations less frequently than controls and less satisfaction from their performance.

We also found that many of the men with social phobia resorted to paid sex (42% vs. 8% for controls); indeed, some had experienced only paid sex during their life (21% vs. 0% for controls). The reason for the preference in men for paid sex over the usual partnership remains unclear. Is it that they do not feel the pressure of performance, or is it the lack of a distressful interpersonal interaction in this situation? Be that as it may, the use of paid sex may be considered an atypical avoidant behavior. By comparison, the women demonstrated a clearer avoidance pattern: they had relations less often with their partners and had had a lower total number of sexual partners. A higher proportion of women with social phobia had a history of only 1 or no sexual partner in their life compared with controls (44% vs. 6%, respectively). Although it is possible that the avoidance in these patients was a result of sexual problems, we believe that it is more likely a manifestation of their social anxiety and as such serves as a solution for diminishing their exposure to new relationships. In general, in men, sexual cycle parameters representing performance (such as ease of erection) accounted for a major part of their sexual difficulties, whereas in women, the disorder was more pervasive, with little difference between parameters representing performance and parameters representing other sexual domains.

In addition, men with social phobia reported more events of delayed ejaculation than controls. Although pre-

Table 5. Sexual History and Behavior in Patients With Social Phobia and Mentally Healthy Controls[a]

	Men			Women		
Psychosexual Behavior	Social Phobia (N = 24)	Controls (N = 24)	p Value[b]	Social Phobia (N = 16)	Controls (N = 16)	p Value[b]
Age at first sexual relations, mean ± SD, y	19.7 ± 2.4	16.6 ± 2.0	< .001	18.9 ± 2.4	18.6 ± 2.3	NS
Age at first masturbation, mean ± SD, y	14.2 ± 2.1	14.1 ± 2.0	NS	15.4 ± 5.5	17.07 ± 4.0	NS
No. of sexual partners in the past, mean ± SD	11.3 ± 17.0	14.0 ± 19.8	NS	3.2 ± 3.8	9.0 ± 7.7	< .05
One partner or fewer, N (%)	4 (17)	7 (29)	NS	7 (44)	1 (6)	< .05
No. of paid partners in the past, N (%)	10 (42)	2 (8)	.002	0 (0)	0 (0)	NS
Only paid partners, N (%)	5 (21)	0 (0)	.002	0 (0)	0 (0)	NS
Sexual abuse in the past, N (%)	0 (0)	0 (0)	NS	5 (31)	2 (13)	NS

[a]Abbreviation: NS = nonsignificant.
[b]One-way analysis of variance; chi-square test.

mature ejaculation may be related to anxiety, in this group, it may result from the overall poor sexual performance (according to the self-reported difficulties in arousal and loss of desire during intercourse).

Women with social phobia, despite their pervasive sexual dysfunction, did not report less overall enjoyment of sex. We suggest that this finding may point to a wider significance of sexual satisfaction in women than men and the greater influence of emotional factors on overall satisfaction.

Stein[20] suggested that patients with social phobia have a high rate of central nervous system hypodopaminergism, which may provide at least a partial explanation for sexual dysfunction in social phobia patients, since dopamine is known to play a major role in sexual function.[21] However, an impairment in serotonergic activity cannot be excluded since serotonin is involved in social phobia as well as in sexual activity. The interaction between neurobiological and psychological factors in social phobia–related sexual dysfunction merits further investigation.

To the best of our knowledge, this is one of the first studies in which a detailed, interviewer-rated sexual function and behavior questionnaire was used to detect possible differences between patients with social phobia and healthy individuals. One weakness of the study stems from the fact that the control group consisted of a mix of 3 subsets of subjects (medical students, surgery patients, and paramedical staff). However, this strategy did not seem to affect the results, since as a whole they did not differ in their demographic characteristics from the experimental group and no subgroup differences were detected within the control group. The validity of our survey is difficult to establish in the absence of comparable studies. Some of our findings are consistent with previous reports.[8–13] In the most recent published study, Figueira et al.[22] reported a 33.3% rate of sexual difficulties, especially premature ejaculation, in patients with social phobia. A similar comparative study including patients with anxiety and mood disorders is needed to demonstrate the specificity of the sexual function deficits to social phobia patients and to obtain internal validity for our findings.

The awareness of clinicians is important not only for improving patients' quality of sexual life but also because the more frequent use of paid sex in men with social phobia may increase their risk of sexually transmitted diseases.

Further studies using complementary interviews with the subjects' sexual partners also are needed to confirm and expand our findings.

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