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Gender difference in antidepressant-related sexual dysfunction in Taiwan

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ABSTRACT

Objective: Sexual dysfunction accompanied by depression may be altered by antidepressants. The effects of antidepressants on sexual dysfunction among males and females remain to be investigated.
Methods: Three groups of subjects, drug-free patients with depression ($N=125$), medicated patients with depression ($N=145$) and healthy volunteers ($N=255$), were recruited. A Chinese version of the Changes in Sexual Functioning Questionnaire was employed to assess sexual function as the primary outcome.
Results: Drug-free depressed females and medicated depressed males had more sexual dysfunction than healthy controls. The desire for sexual behaviors among healthy females and medicated depressed females was higher than that of drug-free depressed females.
Conclusion: Depression and antidepressants may have different impacts on the sexual function of males and females.

1. Introduction

There is a broad consensus that sexual dysfunction is consistently higher in patients with major depressive disorder (MDD) than in the general population, with the prevalence ranging from 40% to 65% prior to antidepressant therapy [1–5]. One of the most frequently reported sexual problems in untreated patients with MDD is a sexual drive reduction (approximately 40% of men and 50% of women) [6,7]. Furthermore, sexual dysfunction may be triggered or exacerbated by antidepressant treatment. Estimates of the prevalence of sexual dysfunction associated with antidepressant therapy range from 22% to 54% [8,9], and an incidence as high as 73% has been reported [10].

MDD and antidepressants could impact all phases of sexual activity, including a decrease in desire, arousal, orgasm and ejaculation. Beyond the impact on quality of life, these adverse effects frequently lead to medication intolerance and discontinuation [10,11]. Selective serotonin reuptake inhibitors (SSRIs) are associated with relatively high rates of orgasm-related side effects in both sexes [12,13], but some reports have suggested that sexual interest and functioning are improved in women [14,15]. There might be some differences in specific symptoms of sexual dysfunction between men and women after antidepressant treatment. In men, treatment with SSRIs and serotonin–norepinephrine reuptake inhibitors (SNRIs) may lead to an inability to achieve an erection and/or reach orgasm, whereas, in women, there tends to be a greater impairment of sex drive and/or delayed or difficult orgasm [16–18].

Although the influences of gender on the sexual function of depressed patients have attracted attention in recent years [7,19,20], few studies have focused on this issue in Asian populations. In addition, many physicians frequently ignore patients' sexual dysfunction and view it as a forbidden topic, especially in Asians [8,21]. Our previous study revealed that the gender difference should be considered while measuring sexual satisfaction and confirmed that the Changes in Sexual Functioning Questionnaire (CSFQ) is a sensitive tool to screen sexual dysfunction in both healthy and depressed subjects [1]. Most studies have focused on sexual dysfunction in patients taking antidepressant. However, studies comparing the severity of sexual dysfunction among a healthy population, drug-free depressed patients and medicated depressed patients are still scarce in Asians. The aim of our study was to evaluate the sexual function differences among healthy volunteers, drug-free depressed outpatients and medicated depressed outpatients in Taiwan.

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2. Method

2.1. Samples

Three groups of subjects, healthy volunteers, drug-free patients with depression and medicated patients with depression, were recruited. Two-hundred and fifty-five healthy volunteers (group 1) who scored less than 19 on the Taiwanese Depression Questionnaire (TDQ) [22,23] were recruited from the community. One-hundred and twenty-four drug-free patients (group 2) with depressive disorders, including MDD, dysthymic disorder or both (*Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition*) [24], were recruited from the psychiatric outpatient clinic of a university hospital and interviewed by experienced psychiatrists who have been practicing for more than 5 years. They did not receive electroconvulsive therapy and/or antidepressants or other psychotropic medications within the last 3 months. One-hundred and forty-five medicated patients (group 3) with aforementioned depressive disorders were also recruited from the psychiatric outpatient clinic of a university hospital at a scheduled visit. To avoid selection bias in the severity of depression, eligible patients were recruited only if they have received one of the following antidepressants for at least 3 months: fluoxetine, fluvoxamine, paroxetine, sertraline, venlafaxine, bupropion, mirtazapine, moclobemide, trazodone, imipramine, doxepin and maprotiline, shown in Table 1. Most of the drugs were either SSRI or SNRI. Seventy-four females (87.1%) and 43 males (71.7%) were treated with either SSRI or SNRI. Patients were not randomly assigned to any antidepressant, and this study was based on the naturalistic observation of depressed patients.

All participants' sexual dysfunction and global depression levels were assessed using the Chinese version of the CSFQ [24,25] and the TDQ [23], respectively. They were required to (a) be at least 18 years of age and (b) have been sexually active (defined as having experienced or having engaged in sexual intercourse, masturbation or other sexual activities such as bondage, outercourse, etc.) at some time during the past 12 months.

Since previous studies have reported that comorbid illnesses (e.g., cardiovascular diseases, diabetes, hypertension) may affect sexual function [26–28] and concomitant medications use may potentially cause sexual dysfunction [29,30], all participants from three groups with physical comorbid illnesses and those taking prescription medications were excluded from this study. In addition, the exclusion criteria for the depressed patient groups were (a) a current diagnosis of other mental disorders; (b) a potential serious suicide risk as judged by a psychiatrist; (b) any chronic or serious medical and/or neurological condition, such as diabetes, hypertension, malignancies, etc.; and (d) medicated patients with concomitant use of electroconvulsive therapy or with other psychotropic medications use, such as antipsychotics, within the last 3 months.

The study protocol was approved by the Ethical Committee for Human Research at National Cheng Kung University Hospital, and informed consent was obtained from all participants.

Table 1
The list of antidepressant use among medicated patients with depression

	Female	Male
SSRI/SNRI	80	44
Fluoxetine (SSRI)	15	7
Fluvoxamine (SSRI)	1	4
Paroxetine (SSRI)	18	15
Sertraline (SSRI)	25	12
Venlafaxine (SNRI)	21	6
Other antidepressant	9	21
Trazodone (SARI)	11	4
Bupropion (NDRI)	0	5
Doxepin (TCA)	2	1
Imipramine (TCA)	1	4
Maprotiline (TeCA)	0	1
Mirtazapine (NaSSA)	2	10
Moclobemide (MAOI)	4	0

Note: Due to multi-antidepressant use of some patients, the sum is not equal to the number of the patients.
NA: no antidepressant (drug-free); SARI: serotonin antagonist and reuptake inhibitor; NDRI: norepinephrine–dopamine reuptake inhibitor; TeCA: tetracyclic antidepressants; NaSSA: noradrenergic and specific serotonergic antidepressant; multi-: using more than one antidepressant.

Table 2
Demographic characteristics of the healthy volunteers, drug-free patients and medicated patients with depression

	Healthy volunteers $N=255$	Drug-free depression $N=125$	Medicated depression $N=145$	ANOVA/χ^2
N (%)				
Male	120 (47.1%)	46 (36.8%)	60 (41.4%)	$\chi^2=3.83$
Female	135 (52.9%)	79 (63.2%)	85 (58.6%)	
Age (mean±SD)	31.5±9.9	37.7±12.8	43.3±11.7	$F=53.44^{**}$
Male	30.5±10.3	37.3±12.9	43.0±12.8	$F=24.13^{**}$
Female	32.3±9.4	38.0±12.9	43.5±11.0	$F=28.22^{**}$
Marital status (M/S)[a]	115/140 (45.1%/54.9%)	70/54 (56.5%/43.5%)	105/38 (73.4%/26.6%)	$\chi^2=29.83^{**}$
Male	46/74 (38.3%/61.7%)	26/19 (57.8%/42.2%)	34/24 (58.6%/41.4%)	$\chi^2=8.83^{*}$
Female	69/66 (51.1%/48.9%)	44/35 (55.7% /44.3%)	71/14 (83.5%/16.5%)	$\chi^2=24.71^{**}$
TDQ (mean±SD)	10.70±8.34	35.09±11.21	19.96±13.43	$F=207.20^{**}$
Male	9.72±8.09	35.15±10.82	19.00±12.97	$F=96.11^{**}$
Female	11.57±8.50	35.05±11.49	20.64±11.49	$F=107.87^{**}$

ANOVA: analysis of variance.
[a] M, includes married and living with a partner. S, includes single, divorced and married but separated. The marital status of one drug-free depressed male and two medicated depressed males was missing.
* $P<.05$.
** $P<.10$.

2.2. Measures

2.2.1. The changes in sexual functioning questionnaire (CSFQ)

The Chinese version of the CSFQ was translated and modified from Clayton's 14-item CSFQ [25,31]. The questionnaire, a gender-specific version, assesses global sexual function (total score) and each of five domains as follows: (a) sexual pleasure, (b) sexual desire/frequency, (c) sexual desire/interest, (d) arousal and (e) orgasm. The CSFQ was previously used in another study in Taiwan with good reliability [32]. The internal consistency (Cronbach's α) of the Chinese version of the CSFQ was found to be 0.86.

The respondents were asked to indicate whether and how often the sexual functioning in each item was experienced on a 5-point Likert scale. Their responses yielded a global CSFQ score ranging from 21 to 61, with a lower score indicating a poorer quality of sexual function. Each patient completed the questionnaire during a single clinic visit.

2.2.2. TDQ

The TDQ is a self-rated scale with 18 items relating to depression symptoms; the cutoff score of 19 has a good reliability (sensitivity=0.89; specificity=0.92), and the internal consistency (Cronbach's α) is 0.94 [22,23]. The TDQ is a culturally sensitive depression screening questionnaire in which respondents are asked to indicate how frequently each item has been experienced on a 4-point Likert scale. The results yielded a global TDQ score ranging from 0 to 54, with higher scores indicating a more severe level of depression.