Editorial

Internet Sex Addiction – A New Distinct Disorder

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Internet addiction is a common disorder that is seeking inclusion in DSM-V[1,2], as it fulfills all the diagnostic characteristics i.e. excessive use; withdrawal; tolerance and negative repercussions. Internet sex addiction is a severe form of internet addiction.

Sexual addiction is defined as having a sick or pathological (out of balance) relationship with sex that is harmful to one's self or to others[3]. Internet sex is also defined as the consensual sexual discussion on-line for the purpose of achieving arousal or an orgasm. It is also known by the names – 'Cybersex', 'Cyber porn addiction', 'Cybering', 'Virtual sex addiction', 'sex addiction' and 'Sexual addiction. Sexual addicts form a compulsive and obsessive need to find sexual gratification. Like an addict, withdrawal symptom can occur with absence of the habit. Sex addicts are generally secret about their sexual activities and they deny their habit when confronted about it.

Internet sex addiction results more frequently due to anonymity and convenience provided in the internet. Internet technology also provides an inter-active experience and a realm of virtual intimacy for its users. Online videos, chats room games, photo galleries and virtual reality provide users with several different medium through which they can obtain and purchase porn[3]. Behind the anonymity of cyberspace, online users can conceal their age, marital status, gender, race, vocation, or appearance. It has contributed to an increasing number of sex addicts. Unsuspecting internet users fall to victim to cyber-sex obsession. There are web sites that are gateways to other more explicit and shocking content. Before long people can end up involved in sexual content that is way beyond their original interest and desire. It eventually becomes sick. A "danger downloader" is someone who views content that eventually creates a compulsion to explore potentially dangerous behavior in real life. "Danger downloaders" actually go out to fulfill their sexual fantasies with people who have cyber names like "Slave Master". The online porn industry uses many strategies to promote use of their sites, including **Pop-up windows (**trap users in an endless loop of porn), **Home page hijacking** (planting a Java script command on computers to change the user's default home page to a porn site), **Stealth sites (** a variety of techniques, including buying up expired domain names, exploiting common misspellings, or using well-known names of companies or artists) and **Hidden key words that are picked up by search engines (**Porn operators bury key words, including brand names of popular toys or names of pop artists, in the code of their Web sites to lead children and teens to their sites).

Accordingly to an MSNBC report[3], cyber sex is a growing addiction like any addiction, if excessively used. Cyber-sex can interfere with daily activities and can ruin relationships. People have lost jobs, spouses and money because of their addiction to online sex. It can also create misconception related to normal sexual life. People who suffer from low self-esteem, a distorted body image, untreated sexual dysfunction, or a prior sexual addiction are more at risk to develop cybersex/cyber porn addictions.

In a survey[4], it was found that 7 of 10 participants keep online sexual activities a secret, 1 in 5 men and 1 in 8 women use computers at work to access sexual material; 6 times as many men engage in online sexual pursuits as women. 17 percent of respondents that were not at risk before the internet may be vulnerable to sex addiction that interferes with their daily lives. One percent of respondents could be classified as cyber-sex

compulsives. Estimates suggest that 1 in 5 Internet addicts are engaged in some form of online sexual activity (primarily viewing cyber porn and/or engaging in cybersex). Studies show that men are more likely to view cyber porn, while women are more likely to engage in erotic chat. The Cybersex Addiction Test[5] — (developed by Dr. Kimberly Young, contains ten questions and it outlines the common warning signs associated with the disorder), Porn Addiction Questionnaire (from Self Help: Overcoming Pornography Addiction) and Cybersex Addiction Questionnaire (Rob Weiss, M.A., from the Society for the Advancement of Sexual Health) can be used to assess the addiction.

Treating internet sex addiction requires special care, as complete abstinence from the computer isn't always possible in today's technological world. Addicts often need the computer for work or school making the temptation to return to online sex just a mouse click away. To help cybersex addicts understand the emotional and psychological factors leading to relapse, one can provide *in-person, telephone, and online counseling* for immediate, caring, and confidential advice to deal with addiction. The best thing is to avoid becoming cyber sex addicted is to abstain from surfing the net for porn. The sites can also be blocked as done in some institutions and countries. The best way is to discuss the problem. There are websites[1,3] which are providing help to sex addicts. Participation in a local sex and love recovery group, stopping acting out, remove dissatisfaction with emotional or sexual life and psychotherapy sessions are other measures used. The self-help 12-Step programs *Sex and Love Addicts Anonymous* (SLAA) and *Sex Addicts Anonymous* (SAA) specialize in recovery from cybersex or Internet porn addiction.

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Presidential Oration

Aerospace Psychiatry : Indo-Soviet joint manned space odyssy and yogic perspective

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Illustrious Past Presidents, esteemed Delegates, Ladies and Gentlemen,

I welcome you to the 18th Annual Delhi Psychiatric Society meeting at the Heritage Sariska Palace and Sariska wild life sanctuary. I express my profound gratitude and appreciation for electing me the President of Delhi Psychiatric Society. I wish to assure you that I will do my utmost to be worthy of your trust and support.

I have chosen Aerospace Psychiatry with special reference to Indo-Soviet joint manned space odyssey and Yogic perspective as themes of my presidential oration. I had the privilege of being a member of the team for selecting, training as well as evaluating the first Indian cosmonaut who ventured into space.

History and future of Indian Space Programme

India has become the 5th country in the world after US, Russia, Japan and European union to reach moon in 2008. It was India's first Prime Minister Pandit Jawahar Lal Nehru who in 1962 laid the foundation of India's space programme and on his birth centenary it is a befitting tribute to him to have our flag on moon (Table 1).

Table-1: History and Future

Indo-Soviet Joint Manned Space Odyssey

- Indian Cosmonaut: Rakesh Sharma
- 3rd April – 11 April, 1984

Aerospace Psychiatry : An Emerging New Field

- Chandrayyan-I : 14th November 2008
- Chandrayyan-II : Between 2010 to 2012 & will be launched
- Manned Flight low earth orbit 2000 km above the earth-2014
- Manned Lunar mission - 2020

India's use of outer space is expected to make significant contribution towards solving major national problems like mass illiteracy and exploitation of national resources. Space technology will also be used for satellite communication, satellite remote sensing for resource survey and management, environmental monitoring and metereological services. Images collected are analyzed to obtain information related to geology, hydrology, cartography, land use, forestry, snow cover and agriculture.

The significant of space Odyssey is scientific and military purposes, commercial, industrial and political.

Effects of space flight

Space flight exposes man to a number of unusual environmental stresses (Table 2). Weightlessness being the major stressor affects various organs of man though certain adaptive responses take place over with period of time which helps to cope with some of the problems of hostile environment of space. There are certain techniques and countermeasures which help to alleviate and reduce the severity of stressors of space flight. Psychiatrists and psychologists play a very significant role for selecting an ideal astronaut/ cosmonaut and maintaining his psycho-physiological well being for his sustenance in space.

Training of a cosmonaut

The different aspects of training include: duration of 18 months to 2 years, zero gravity training, centrifuge rotation training and physical training.

Yoga experiments

- Aimed to determine the role of yogic exercises in minimizing the adverse effects of

weightlessness during the space flight from 3rd April to 11th April 1984.

Table-2: Sresses during space flight

Environmental stresses during Space Flight

- Internal elements of man
- Dynamic elements:
  - Weightlessness
  - Acceleration
- Physical elements :
  - Radiation safety
  - Artificial gas atmosphere and its contaminants

Effect of Zero-g space environment on cardiovascular system

- Head-ward fluid shift
- Complex neuro-humoral reflex mechanism
- Cardiovascular deconditioning

Effects of Zero-g space environment on musculoskeletal system

- Comparative disuse and atonia of muscles
- Decrease in bioelectric activity of neck, pelvis and back muscles
- Decrease in muscle volume particularly lower extremities
- Increase in performance time
- Diminished work capacity
- Rapid fatigue

Space motion sickness

- Americans : 80%
- Soviet : 60%

Spatial illusory sensations in weightlessness

- Tumbling forward or backward
- Inverted or head down body position
- Spinning of body

Nystagmus in space

- Spontaneous nystagmus seen in both horizontal and vertical directions
- Positional nystagmus

Selection of a cosmonaut

- Selection amongst supernormal
- Performance evaluation on flight oriented psychomotor tasks
- Isolation

Sequence of yoga exercises in cosmonauts

Sequence of yoga exercises (on the ground) during training phase (Table-3).

Table-3

Asanas/Exercises	Time in minutes
1. Sithilikaran Vyayama	
a) Dhavati	8 Minutes
b) Stretch up exercise	5 Minutes
c) Tiger stretch	2 Minutes
2. Suryanamaskar	5 Minutes
3. Standing Posture	
a) Ardha Kati Chakrasana	2 Minutes
b) Parsva Konasana	2 Minutes
c) Ardha Chakrasana	1 Minute
d) Fada Hastasana	1 Minute
e) Parivitta Trikonasana	2 Minutes
4. Uddiyana Bandha	2 Minutes
5. Sitting Posture	
a) Sasankasana	1 Minute
b) Ustrasana	1 Minute
c) Paschimatanasana	1 Minute
d) Padmasana	1 Minute
e) Ardha Matsyendrasana	2 Minutes
6. Supine Posture	
a) Viparitakarani	2 Minutes
b) Sarvangasana	2 Minutes
c) Matasyasana	2 Minutes
d) Halasana	1 Minute
e) Chakrasana	1 Minute
7. Prone Posture	
a) Bhujangasana	1 Minute
b) Salabhasana – Eikipada	1 Minute
– Divipada	1 Minute
c) Dhanurasana	1 Minute
8. Savasana	6 Minutes
9. Aantrikhnidra	3 Minutes
10. Pranayama	4 Minutes
Total	**60 Minutes**

Asanas which cause cephalward flow of body fluids on ground are likely to activate pressure receptors in intrathoracic region.

1. Viparitakarani
2. Sarvangasana
3. Halasana
4. Uddiyana Bandha
5. Chakrasana

Asanas likely to influence vestibular system

a) Viparitakarani
b) Sarvangasana
c) Halasana
d) Chakrasana

Asanas likely to influence vestibular system are Asanas which cause cephalward flow of body fluids and involve neck movements

a) Viparitakarani
b) Sarvangasana
c) Halasana
d) Chakrasana
e) Sasankasana
f) Ustrasana
g) Tiger Stretch
h) Rekha Gati
i) Dhavati

Asanas likely to reduce space sickness by optimization of arousal

a) Savasana
b) Pranayama
c) Anntrikshnidra

Benefits of yoga exercises in cosmonauts

Pulse rate and BP recorded before and after yogic exercise session during the pre-flight training (both Indian cosmonaut candidates) (Table 4)

Table-4

	Pulse rate per minute		Blood pressure	
	Before	**After**	**Before**	**After**
Subject 1 RS	60	60	116/70	116/70
Subject 2 RM	72	66-72	120/70	120/76

Experiences in the orbit

- Felt suspended upside down for 3-5 hours
- Face flushed
- Fullness of nose
- Temperature 99 degree F
- Positional disorientation
- Confusion
- Backache
- Beautiful views of earth and sky
- Orbital home comfortable

Experiences in the orbit were rated by :

- Inflight Mood Rating Questionnaire
- Medico-psychological Questionnaire

In Flight Yogic Exercise

1.	Sithilikaran Vyayama	Stage I- 1 minute Stage II - 1 minute
2.	Padahasthana	2 minutes
3.	Parivratta trikonasana	2 minutes
4.	Uttarasana	2 minutes
5.	Pranayama	2 minutes
	Total	**10 minutes**

Return to Earth

- Returned from maiden space voyage on 11th April 1984
- Felt weight had gone up 3 times and this feeling lasted for 12-18 hours
- Disorientation, fuzziness of head lasted for 3 days
- After 3 days, felt as good as back to earth bound life

Conclusions

- Biomedical information obtained from manned space flight so far optimistic
- Various body systems are involved in the adaptation processes: in 1-2 months, man becomes relatively stable
- Yogic exercises had beneficial effects on the Indian Cosmonaut
- Future of planet earth lies on outer space
- Certain problems remain unsolved like increased susceptibility to illness, lowered resistance to infection and neuro-emotional changes
- Search on solution needs further experiments in this field of life sciences
- Evidence indicates that the extent of adaptation to weightlessness and to other forces can be manipulated by various means
- There is a promising role for Psychiatrists, Psycho-logists and other medical specialities.

Ravi Pandey Memorial Award Paper

Gender Differences in Phenomenology of Patients with Obsessive Compulsive Disorder

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Abstract

Previous studies have shown differences in clinical features of obsessive-compulsive disorder (OCD) between men and women, including mean age at onset of obsessive-compulsive symptoms (OCS), types of OCS, comorbid disorders, course, and prognosis. The aim of this study was to compare male and female patients with OCD on several demographic and clinical characteristics. All new patients with OCD (ICD 10, criteria) who sought treatment at the OCD clinic were evaluated. The assessment instruments used were the semi structured pro forma especially designed for the study, Yale-Brown Obsessive-Compulsive Scale and check list to evaluate OCD severity and symptoms, and a semi structured interview along with standard mental-state examination.

Forty seven percent of the patients (n = 31) were males. They had significantly earlier age at onset of OCD and were less likely to be married. They presented significantly more sexual obsessions and females with significantly more contamination obsessions and cleaning and checking compulsions. With regards to comorbidity, we did not find any differences in the frequency of co morbid psychiatric disorders between male and female patients with OCD. No significant differences were observed between sexes concerning family history of OCS or OCD, and global symptoms severity, either in obsession or compulsive subscale or insight point.

The present study confirms the presence of sex-related differences described in other countries and cultures.

The fact that the OCS starts earlier and probably have a worse impact in men can eventually lead to more specific and efficacious treatment approaches for these patients.

Keywords: *Obsessive Compulsive Disorder, Gender differences, Phenomenology*

Introduction

Obsessive–compulsive disorder (OCD) was initially thought to be a relatively rare disorder. Although questions remain about the validity of lay interviews[1], there is some evidence that OCD is a common psychiatric problem with an estimated lifetime prevalence rate of up to 3.3%[2,3]. Significant advances have been made in characterizing the phenomenology and neurobiology of this condition in recent years[4,5,6]. It has become clear that OCD is not simply a uniform or homogeneous disorder, but rather a heterogeneous disorder mediated by a range of different factors[7]. Gender, for example, may provide a useful window onto the clinical and biological heterogeneity of OCD[8]. A number of studies have reported that onset of the disorder is earlier for males, and that early onset male OCD is more likely associated with tics[7,9]. However, a cohort of OCD subjects identified in the Epidemiological Catchment Area (ECA) study[2] demonstrated a similar age of onset in men and women, perhaps pointing to differences between clinical and community samples. OCD in males has been characterized as a subtype with a more frequent history of prominent sexual, exactness and symmetry obsessions[10,11], and checking, symmetry and bizarre compulsions[10]. Among females with

OCD, washing rituals and contamination fears may be more common[12,13]. Again however, conflicting data regarding OCD patterns and gender exist, e.g., a higher rate of contamination obsessions was found among males in another study[14]. Few studies have found no sex difference in phenomenology of OCD[15]. Further there has been suggested that cultural differences may play a role in the phenomenology of OCD.

In addition to clinical research, studies of the role of gender in genetic studies of OCD have also been undertaken. Some studies of genes involved in monoaminergic neurotransmitter systems have suggested a sexually dimorphic association between OCD and polymorphisms of the catechol-O-methyltransferase gene (COMT) and the monoamine oxidase A gene (MAO-A).[16,17]

With regards to co morbidity, more than 50% of patients with OCD have co morbid psychiatric disorders[18]. Female subjects with OCD tend to have more of eating disorders[12,19,20] and depression[12,19] in comparison with males with OCD who showed more of social phobia[20], hypomania[20], depersonalization[20], substance-related disorders[20], and alcohol dependence[19].

Though studies have shown sex differences in demographics, symptom profile, and co-morbidity in OCD, there are inconsistencies. In addition, there are only few studies from outside Western settings[15,21], limiting the generalization of these findings across cultures. In this study, we investigated the sex related differences in subjects with OCD with respect to demographics, symptom profile, and comorbidity.

Methodology

The present study was conducted amongst the patients attending OCD clinic of the department of psychiatry of G. B. Pant Hospital and associated Maulana Azad Medical College, New Delhi. The OCD clinic runs once every week.

All the new patients who were registered in the clinic from December 2007 to October 2008 were screened and those who fulfilled the following criteria were taken for the study.

Inclusion criteria

1. Patients with OCD according to ICD 10
2. Patients willing to give a written informed consent for the study

Exclusion criteria

1. History of any psychiatric illness prior to the onset of OCD

As a result a total of 66 patients were recruited for the study.

Assessment

All the assessments were made once at the time of intake into the study. The patients were evaluated using a semi structured interview and standard mental-state examination for the purpose of diagnosing psychiatric disorder. Psychiatric diagnosis was made by ICD 10 criteria. Data on age, age of onset of OCD, sex, marital status, etc were collected and the findings were recorded on a semi structured proforma especially designed for the study. Severity of OCD was assessed with the first 10-items of the Y-BOCS, a clinician-administered scale developed to assess the severity of obsessions and compulsions, independent of the number and type of obsessions or compulsions present[22]. The Y-BOCS also includes a symptom checklist that contains a list of obsessions and compulsions.. The score for item 11 on the Y-BOCS was considered as the measure of insight level. Score of degree on item 11 of Y-BOCS are considered to mark the boundary between awareness and no awareness of the illness.[23]

Statistical analysis

Statistical analysis was carried out with a commercial software package (SPSS, version 11.5). For the analysis of two categorical variables Chi-squared test (Fischer test where applicable) was used. Student's t-test was used to compare continuous variables between two groups and to compare categorical dichotomous versus continuous variables. Further, to examine the influence of sex on symptom profile and comorbidity of OCD, we performed a logistic regression analysis after controlling for the age at onset and reported the adjusted p values. All tests were 2 tailed, and statistical significance was set at $p < 0.05$.

Results

Socio demographic variables:

Table 1 shows the comparison of the socio demographic profile of male and female patients

with OCD.

As per table 1a, males had earlier age at onset and at assessment as compared to females and the difference in the mean ages was significant.

Table 1b shows that there were significant differences with regards to the marital status with 54.8% of males being married as compared to 65.7% of females. No significant differences were observed with regards to religion, background, presence of precipitating factor and presence of family history of psychiatric illness.

Table 1c shows the educational and occupational details of the study patients.

As shown in table 2a, after adjusted for age at assessment, males had significantly higher rates of sexual obsessions and females had higher rates of contamination obsessions. Table 2b shows the frequency of compulsions in males and females cases with OCD. Females had higher proportion of cleaning and checking compulsions. Initial chi square analysis showed a trend toward a higher rate of checking compulsions in female subjects; however, this association became weaker when logistic regression analysis was performed controlling for age at onset.

There was no difference in the mean Y-BOCS scores as well as score on insight item (point 11) of YBOCS between the 2 OCD groups, as is shown in Table 2c.

Table-1: Socio demographic details

Table 1a:

Variable	Males		Females		P value
	mean	SD	mean	SD	
Age at assessment	24.35	4.82	27.34	5.36	0.021
Age at onset	19.25	5.67	23.19	6.41	0.019
Duration of illness	4.89	3.19	4.50	2.98	0.32

(Independent sample t-test)

Table 1b:

Variable	Sub group	Group				chi Square value	p value
		Male		Female			
		Frequency	Percent	Frequency	Percent		
Marital status	Unmarried Divorced/ separated	14 17	45.2 54.8	9 23	25.7 65.7	9.61	0.02
Religion	Hindu Muslim Sikh Christian	20 09 02 00	64.5 29 6.5	21 12 01 01	60 34.2 2.9 2.9	1.58	0.66
Background	Rural Urban	10 21	32.3 67.7	9 27	25.7 74.3		
Family History	Present Absent	4 27	12.9 87.1	3 32	8.6 91.4		
Precipitating factor	Present Absent	6 25	19.4 80.6	5 30	14.9 85.1		

(Chi Square test)

Gender differences in OCS

The frequencies of obsessive-compulsive symptoms are shown in Table 2.

Table 1c:

Variable	Sub group	Males		Females		chi square	p
		Frequency	Percent	Frequency	Percent		
Education	Primary	3	9.67	4	11.4	2.6	0.62
	Middle	5	16.1	8	22.9		
	Matriculation	6	19.5	10	28.6		
	Senior secondary	7	22.5	7	20.0		
	Graduation	10	32.2	6	17.1		
Occupation	Student	15	48.3	6	17.1		
	Unemployed	5	16.1	6	17.1		
	Self employed	5	16.1	1	2.8		
	Service	6	19.5	3	8.5		
	housewife	0	0	19	54.5		

Table-2: Clinical symptom profile at the time of assessment

Table 2a: Obsessions:

Obsessions	Males		Females		chi square	Unadjusted p	Adjusted p
	Frequency	Percent	Frequency	Percent			
Contamination	12	38.7	29	82.8	13.61	0.00	0.01
Sexual	12	38.7	6	17.1	3.85	0.059	0.048
Hoarding/saving	5	16.1	2	5.7	1.88	0.24	0.21
Symmetry	17	54.8	17	48.6	0.25	0.63	0.52
Aggression	20	64.5	17	48.6	1.69	0.22	0.29
Religion	11	35.4	7	20	1.98	0.17	0.21
Somatic obsessions	9	29	11	31.4	0.04	1.00	1.2
Miscellaneous	27	87	30	85.7	0.02	1.00	0.98

(Chi square, logistic regression)

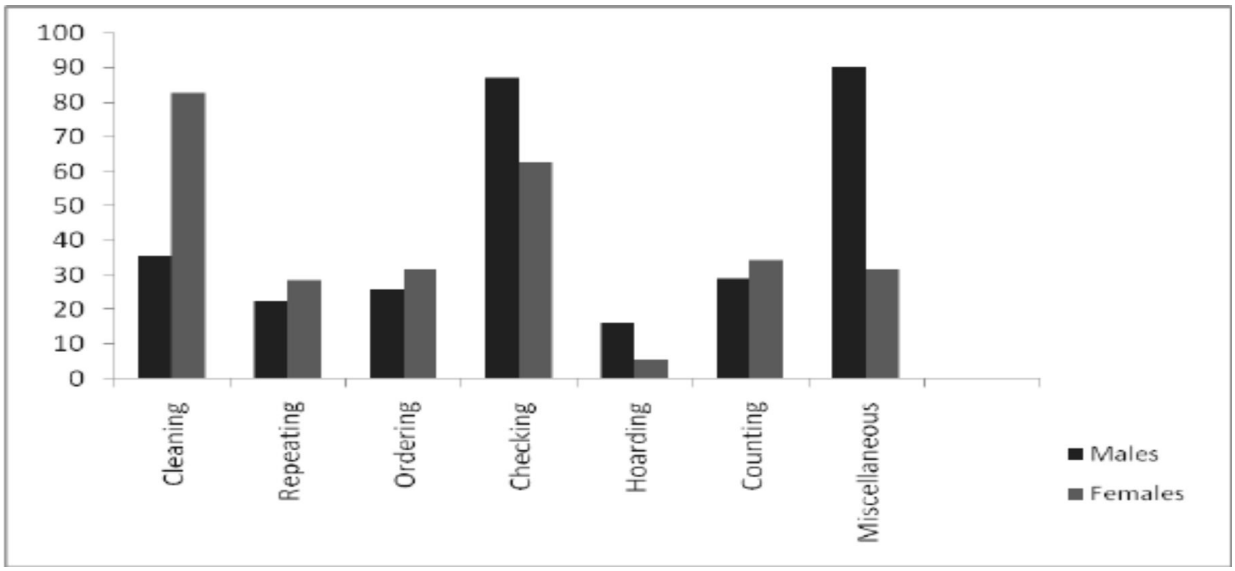

Figure 1: Gender differences in obsessive symptoms

Table 2b: Compulsions:

Compulsions	Males		Females		chi square	Unadjusted p	Adjusted p
	Frequency	Percent	Frequency	Percent			
Cleaning/Washing	11	35.5	29	82.8	15.4	0.00	0.01
Repeating	7	22.6	10	28.5	0.30	0.77	0.66
Ordering/Arranging	8	25.8	11	31.4	0.25	0.78	0.60
Checking	27	87.1	22	62.8	5.0	0.04	0.052
Hoarding	5	16.1	2	5.7	1.88	0.24	0.35
Counting	9	29	12	34.2	0.20	0.79	0.7
Miscellaneous	28	90	30	85.7	0.32	0.71	0.92

(Chi square, logistic regression)

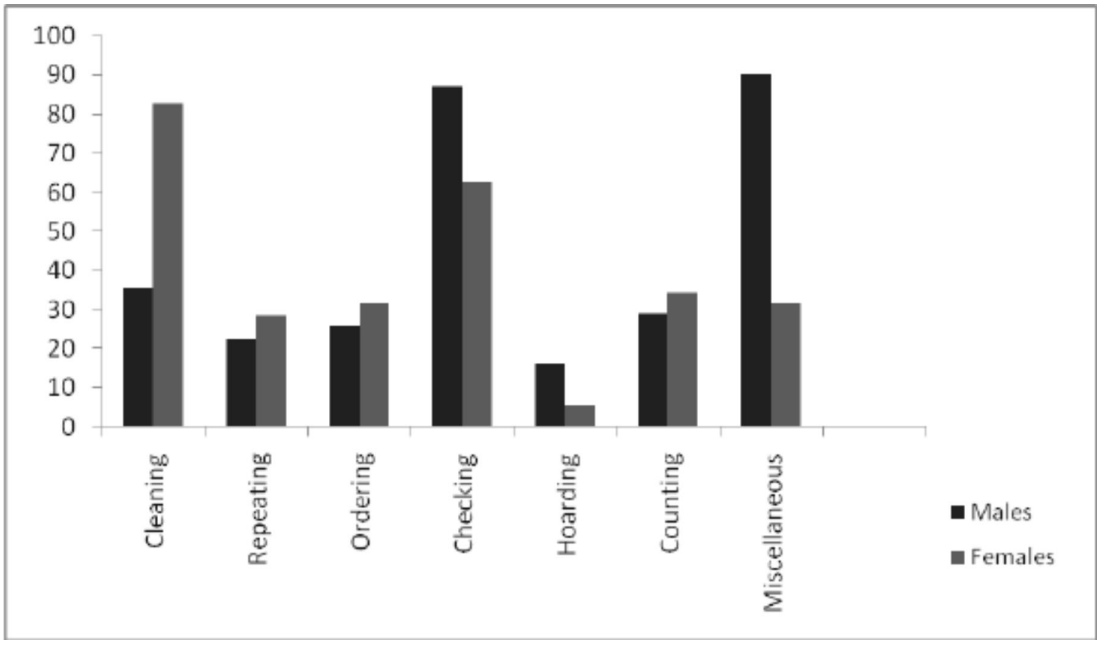

Figure 2: Gender differences in compulsive symptoms

Gender differences in Comorbid psychiatric disorders

The patterns of comorbidity in male and female subjects are described in Table 3. Male subjects with OCD were more likely to have higher rate of social phobia, tic disorders, sexual disorders, hypochondriasis and psychosis, whereas female subjects had a significantly higher rate of depression, panic disorder, dysthymia, agoraphobia and trichotillomania. However, none of the differences were found to be significant.

Discussion

Demographics

Our finding of a roughly equal distribution of males and females with OCD is consistent with a range of previous clinical research studies[18]. The male: female ratio has been observed to be around 1:1.67 (range: 1.25:1 to 1:3.8).

There have been other studies, which have found greater prevalence in males[24]. The authors have explained that this excess may be due to the socio-cultural taboos, prevalent in Eastern communities, in which women feel hesitant to consult a doctor, and moreover, certain rituals like washing and cleaning are deeply ingrained in their societies, so that lesser number of women feel them to be absurd or irrelevant.

The mean age in males was 24.35 years and in females was 27.34 years. The observations were similar to the earlier findings of younger age in males as compared to females[24]. But, one study from

Table 2c: Y BOCS SCORE

Variable	Males	Females	p
YBOCS Obsession Score (SD)	13.6 (2.73)	14.1 (2.99)	0.46
YBOCS Compulsion Score (SD)	11.9 (2.82)	13.02 (2.87)	0.78
YBOCS Total Score (SD)	25.58 (5.02)	27.20 (5.42)	0.21
Score on YBOCS 11th point for the assessment of insight (SD)	1.45 (0.56)	1.28 (0.51)	0.23

(Independent sample T test, SD=Standard deviation)

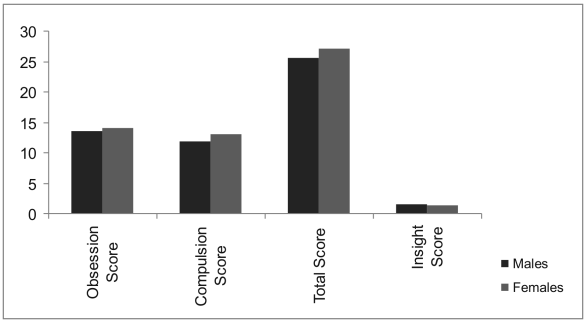

Figure 3: Gender differences in mean YBOCS scores

India,[25] found mean age of males and females to be 33 years and 35 years respectively. This could probably be due to the prevailing social taboos in the past (the study was conducted around 40 years back), where most patients felt hesitant to consult a psychiatrist, and would do so only when the illness used to become severe; or it could be due to meager availability of psychiatric services.

The finding of earlier age of OCD onset in males is also consistent with previous work[18,26, 20,27]

Mean duration of illness in males was 4.89 years, in females it was found to be 4.50 years. The

Table 3: Gender differences in comorbidity

Comorbidity	Males		Females		chi	Unadjusted	Adjusted
	Frequency	Percent	Frequency	Percent	square	p	p
Psychosis	1	3.2	0				
Depression	12	38	17	48.6	1.31	0.31	0.25
Dysthymia	1	3.2	3	8.5	0.82	0.61	0.45
Agoraphobia	0		2	5.7	2.3	0.21	
Social phobia	4	12.1	1	2.8	2.73	0.17	0.23
Tic disorder	3	9.7	0		3.54	0.09	
GAD	0		0				
Trichotillomania	0		1	2.8			
Panic disorder	2	6.5	4	11.4	0.49	0.67	0.8
Hypochondriasis	2	6.5	0		2.3	0.21	
Sexual disorder	3	9.7	0		3.54	0.09	
None	8	25.8	11	31.4			

(Chi square, Fischer test, logistic regression)

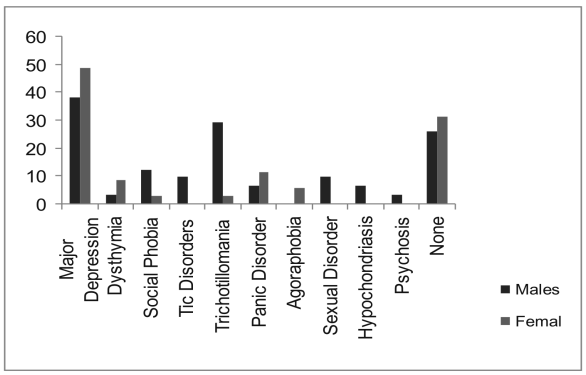

Figure 4: Comorbidity rates in male and females

results observed were similar to those found in the earlier studies.[18,24]

No significant differences was observed in the religion, background or family history of psychiatric illness or presence of precipitating factor was found between the two genders.

Regarding the educational status, 10.6% had attained primary education (Class 5) or below. 19.7% studied till class eight, 24.2% studied till X class, 21.2% completed their schooling (Class12), and the remaining 24.2% were graduates and above. Studies conducted in the past,[2,24] have found that though there was an excess of individuals with

higher intelligence in the case group 31% of the cases were students, 22.6% were employed and 54% were housekeepers. Only 16% patient was currently unemployed. The results found are in keeping with earlier study conducted in India[28], in which an excess of students and housekeepers was found.

Obsessive-compulsive symptoms

The obsessive-compulsive phenomenology in our sample of patients with OCD is broadly consistent with the results from other studies. The higher frequency of sexual obsessions in males has been reported previously[10,29,30,31]. An Indian study[32] done also reported higher prevalence of sexual obsessions in males as compared to females. Lower prevalence in females could be because of the taboo related to discuss these obsessions. Females had significantly higher rates of contamination obsessions which is in concordance with previous literature.[29,30,32] However, a recent Indian study[11] again did not report any significant gender differences with regards to these obsessions.

Females had significantly higher prevalence of cleaning compulsions than males. This finding had been previously reported.[12,20,29,31,32] However, various other western studies have shown no significant gender differences with regards to the cleaning compulsions. There are some data from India to suggest preponderance of themes of dirt and contamination in Hindus[33].

A range of previous studies has found symptom patterns that are in variation with our findings. No significant differences with respect to religious obsessions were found in our study, though a higher trend was reported in males. Previous studies have reported significantly higher rates of religious obsessions in males[11,29,31]. Previous studies have reported the role of religion and religiosity on the obsessional content in some cultures[34], but it is not clear if the sex has any influence on religiosity and religious practices and the influence thereof on the obsessional content. Our study did not find any significant differences with respect to other OC symptoms, though it has reported in the literature that aggressive obsessions have been associated with females[10], whereas males have shown primary obsessive slowness[20], concern with numbers[35] miscellaneous compulsions have also been reported to be in excess in males[10,11]. The explanation for this varying symptom patterns across studies is currently speculative. It could possibly represent a cross-cultural variation in the phenotypic expression of OCD. Differing sample characteristics may also account for the variations across studies. Whether cultural factors could determine sex differences in the phenomenology of obsessional symptoms is unclear. However, studies that report on the phenomenology of OCD in Indian patients[36] support the view that symptom profile is similar to that described in the Western population[18].

We did not find any gender differences in the YBOCS total score, score on obsessive or compulsive scale or on the insight item of YBOCS.

Comorbidity

It is noteworthy that 72% of the patients in the current study presented at least one additional comorbid Axis I disorder, confirming that comorbidity is the rule rather than the exception in OCD. However, men and women did not differ in the general prevalence rates of comorbidity with other psychiatric disorders. Men in this sample were more likely to present with chronic tics[11] and tended to present with more social phobia than women[20,30]. Previous studies have also shown that patients who present chronic tics or Tourette syndrome associated with OCD are predominantly males with early onset of symptoms.[37]

Our results did not support the studies that reported major depression to be significantly higher in female subjects with OCD[10,19], but are consistent with studies that reported no relationship[20,21]. However, the frequency of depression was higher in females than in males. The finding of no sex differences in frequency of depression is contrary to general population sex differences with respect to prevalence of depression. This may be partly due to exclusion of patients with a diagnosis of primary affective disorders. Similarly no significant difference with regards to dysthymia was found in our study.

Another finding is the higher frequency of psychosis comorbid among male patients, which was supported by the findings of another study investigating clinical characteristics in OCD with schizophrenia. The ratio of males among OCD patients with schizophrenia was 75%, whereas it

was 40% among OCD patients without schizophrenia in that particular study[38]. We could find only 1 case where psychotic symptoms started after the onset of OCD. The rarity could be because of the fact that cases where psychosis is primary were excluded.

Females had more simple phobias and trichotillomania compared to men. Sexual disorders were reported by around 10 % of males and none of females. This could be because of taboo related to sexual disorders especially in Indian females.

No case of eating disorder was found in our study. This could be because of rare reporting of eating disorders in studies from developing countries including India[21] and could be a correlate of cultural beliefs and attitudes.

Other co-morbid psychiatric disorders were either absent or very rare for any meaningful statistical conclusions.

The rarity of other psychiatric disorders in our sample could be because of the low sample size and that patients were taken from OCD clinic of a referral hospital were patients with other psychiatric disorders were more likely to be seen in the general psychiatry OPD. Also only clinical interview and standard mental status examination was used to diagnose psychiatric co morbidity.

Limitations of our study included:

1. Our study sample was subject to the biases of referral patterns and selection criteria. Patients were recruited from single treatment centre only and from one specialised clinic, so the degree to which the results can be generalised to other cohorts of patients with obsessive compulsive disorder is uncertain.
2. Structured diagnostic schedules were not used for diagnosing psychiatric illness. However, another study done at the centre showed that the diagnosis made by residents have high concordance with the diagnostic criteria. Also, personality disorders were not evaluated in the study.
3. The sample size was small for major inferences to be drawn probably limiting the study power to detect expected differences between the study groups.

In conclusion, the present study showed that males had earlier age at onset of OCD and were less likely to be married. They had more sexual obsessions, where as females had more of contamination and cleaning compulsions. No significant differences were observed with regards to YBOCS scores and in the frequency of comorbid psychiatric disorders.

To summarize, our study supports that there are gender related differences in OCD. Although considered a unitary condition in the current classifications, OCD is a very heterogeneous disorder with innumerous phenotypic expressions and important sex-related differences. This probably reflects complex interactions between different environmental and biological etiologic factors, including cultural influences and life events, genetic, perinatal, endocrine, and neurobiological components. Currently, biologic research into gender-related differences in OCD is restricted to genetic studies that have inconsistently suggested a sexual dimorphic distribution of catechol-O-methyl transferase and monoamine oxidase genes. More research in this area is still needed, including even larger and more representative samples of patients from India, which is a very large and heterogeneous country. An evaluation of possible gender differences regarding specific OCD symptoms dimensions would also be warranted. Future investigations on OCD gender differences should also comprise community samples because treatment-seeking individuals possibly have some particular clinical features, including higher severity of symptoms.

Also, further research on gender differences in OCD should focus on neurobiologic, family, and treatment studies. A synthesis of evidence from these varying aspects will be necessary to further our understanding of the possible role of gender in OCD.

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