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INDIAN PSYCHIATRIC SOCIETY

EASTERN ZONAL BRANCH

Secretariat : 1/1, Gobra Road, Kolkata - 700014 W.B.
Phone : +913322845300, www.ipsez.org

INDIAN PSYCHIATRIC SOCIETY, EASTERN ZONAL COMMITTEE 2013-14

Dr. Sudir Tindivanam
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Qtr No. 1106, Sector-IV C,
Bokaro Steel City - 827004
Bokaro Jharkhand
M: +919431127230
E: sudir_32001@yahoo.com

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38, Ho Chi Min Sarani,
Kolkata, W.B. -700061
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M:+919436465793

Dr.Om Prakash Singh
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AA 304, Ashabari Apartments,
O/31, Baishnabghata, Patuli
Township, Kolkata
W.B. - 700094
M: +919434013231
E: opsingh.nm@gmail.com

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E: dr.uksinha@gmail.com

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E: samrat912@rediffmail.com

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E: bimalkrishnabhowmic@gmail.com

Dr. Arabinda Brahma +919830066869
E: drarabindabrahma@gmail.com

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E: neelanjana.paul@gmail.com

Representatives of State to Zone:

Assam
Dr. Kushal Tamuli +919864230798
E: kushaltamuli@gmail.com

Bihar
Dr. C. S. Sharma +919334340001
E: chandra_col@yahoo.co,in

Jharkhand
Dr. S.K. Munda +919334725095
E: drsanjaymunda@gmail.com

Manipur
Dr. S. Manikanta +919862556938
E: dr.smanikanta@gmail.com

Orissa
Dr. Rajnikant Shukla +919437142866
E: dr.shukla@ymail.com

Tripura
Dr. Bimal Bhowmik +919436122308
E: bimalKrishnabhowmic@gmail.com

West Bengal
Dr. R. K. Brahma +919831081556
E: unmclinic@yahoo.com

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E: goswamihiranya@yahoo.co.in

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E: drclnarayan@gmail.com

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Journal
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E: drbasudeb_cip@yahoo.co.in

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Dr. Vinay Kumar +919431011775
E: dr.vinaykr@gmail.com

R&D
Dr. P. K. Saha +919830277607
E: pradeepnimhan@gmail.com

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Editorial

DEVELOPMENT IN NEUROSCIENCES- ARE PSYCHIATRISTS READY?

Om Prakash Singh

The research in neurosciences is expanding at a rapid pace. The recent development in the field of Genomics', Neurotechnology, Brain imaging is bringing new hopes and newer challenges.Are we as a psychiatrist prepared to meet the challenges when these innovations are now coming to field from the benches.There are 3 fundamental questions posed by this development.

1) Are we aware of the developments?
2) Are teaching programmes flexible enough to impart this knowledge?
3) What are the ethical and social challenges posed to the practice of psychiatry?

I will try to summarize these issues.

1. NEWER DEVELOPMENTS IN THE FIELD OF NEUROSCIENCES

As we have anti-depressants today to elevate mood, tomorrow we can expect a kind of Botox for the brain to smooth out wrinkled temperaments, to turn shy people into extroverts, or to bestow a sense of humor on a born grouch. But what price will human nature pay for these nonhuman artifices?"
(William Safire) [1]

Neuroimaging - Neuroimaging particularly fMRI is providing an insight to the functioning brain. The imaging studies done in Alzheimer's disease and depression are going to be of predictive value. However, major area of research is moving into decision making, intention, and thinking, lying or deceiving.The number of fMRI studies looking at decision-making tasks has increased within the last five years, not merely because of greater availability of fMRI machines. The entire field of decision-making research is concentrating on questions of function at a systems level, rather than studying decision-making by examining analogous structures in simple model systems.[2]
Brain mapping and personality typing is being done through fMRI and its potential use remains for military, insurance , forensic etc. The inconsistent science of lie detection is now being used in courts.In a research it was possible for the participants who can see their feedback to improve their performance

Neurotechnology - Deep Brain Stimulation (DBS) is already being used for the treatment of neurological disorders like Parkinsonism .DBS is now experimented with changing behavior, impulse control improving mood in depression . Potential use of inducing happiness, love , controlling rage etc. But the most recent advance includes non invasive methods of brain stimulation .Scalp electric current has been found to change behavior. rTMS has been found to change morality. Researchers have found that stimulating right temperoparietal junction through magnetic stimulation can change morality and values which in turn may significantly alter the behavior. Other exciting brain researchs are erasing memories through working on a particular protein, to prevent neuronal death through controlling micro RNA .Optokinetics or stimulating brain region and even single neuron through LASER and implanted optical fiber is now possible raising the issue of the control of the person through remote.

Neuropharmacology- Drugs have been used in the treatment to correct imbalances and deficiency of particular brain substances .They have also been used as drugs of abuse to enhance happiness, boost performance .New research with Donepezil in volunteers is pointing towards it usefulness in learning new skills.
The research is moving towards areas of mood enhancers and Nootropics.

Nil Ratan Sirkar Medical College & Hospital, Kolkata

CREB modulators

CREB modulators are designed to enhance memory formation, without the treatment of any particular disease in mind. They are thought to work by inhibiting PDE4, an enzyme that breaks down cAMP, an important neuronal and intracellular signaling molecule. By increasing the levels of cAMP, these drugs upregulate the activity of a transcription factor called the cAMP response element-binding (CREB). CREBs activate a pattern of neural gene expression that results in synaptic growth and strengthening the connections among active neurons. This may augment the acquisition of long-term memory and strengthen memory consolidation.Once activated, CREB modulators appear to allow brain cells to make the connections vital for memory formation [3]. Tim Tully, a professor of genetics at Cold Spring Harbor Laboratory in New York who developed the drug, said: "If it proves safe and effective, it could ultimately be used by people who want to learn a language or a musical instrument or even in schools."[4] Intranasal oxytocin can be used to reduce shyness and making people more extrovert. Pharmacogenomics has already become important for clinical decisions and even in India now kits are available commercially to test the CYP enzyme system and identify rapid and slow metabolizers.

Neurogenetics- Neurogenetics is a branch of genetics that analyzes the impact of genes on the structure and function of the brain and peripheral nervous system. The major use of neurogenetics is the identification of genetic basis of diseases. The second aspect of neorogenetics is identifying genetic mechanism for various capabilities like memory, intelligence, sports etc. Human genome is already decoded and work in this area is progressing very rapidly. Home-based self-diagnostic tests are available for genetic testing. Genetic engineering may remove perceived weaker genes and enhance perceived desirable genes.

2) ARE TEACHING PROGRAMMES FLEXIBLE ENOUGH:

coming to the second question, Whether our teaching programmes are flexible enough to incorporate these changes . The answer is sadly no. Our residents are hardly exposed to neuroimaging , genetics not to talk about neurotechnology. This gives a real scare of us being left behind.

3) SOCIAL AND ETHICAL ISSUES

The advance in technology is providing almost science fiction like tool to the hands of corporations and government and raising the issues of employment, confidentiality, and military uses.

The Human Genome Project was completed in 2003. While the medical community is still digesting the results, some questions are already emerging:

1. Are psychiatrists prepared to discuss with patients and families the genetic aspect of mental illness? [6]
2. Since genetic testing reflects probabilities and risk factors for mental illness, are patients and families able to understand that genes do not cause diseases or symptoms, but rather "conspire" with the environment to bias the individual toward a syndrome or symptom?
3. Is the data relevant enough to be communicated even in the absence of adequate treatments?
4. Do the offspring of mentally ill patients have the right to know the results of their genetic testing? What about the right not to know if they choose so?
5. Can insurers or employers misuse genetic information?
6. Are we headed toward a twenty-first century neo-eugenics? [7]

Sadly the history of psychiatry is full of collaboration with state .The invention of "sluggish schizophrenia" in erstwhile Soviet Russia for political dissidents, heading the eugenetic experiment of Nazi Germany to being a wiling partner in torture of prisoners in Guatemala Bay, psychiatrist have always provided their expertise in the service of state rather than in service of humanity.

It increases our responsibility to understand this development and apply the science ethically for the betterment of our patients.

Military is one of the major contributors of brain research. The goal becomes evident by going through the following deposition in Presidential commission

on Bioethics of USA:
'Casebeer continued the discussion of neuroscience and related ethical issues by placing them in the context of the Department of Defense. He emphasized the importance of the BRAIN Initiative to DARPA, whose mission is "to prevent strategic surprise, and make it possible for our armed forced to create strategic surprise and prevent battles from happening." Given that human beings are an integral part of warfare, DARPA has had an ongoing interest in developing neurotechnology, he said.
He described four important neuroscientific goals that DARPA is currently undertaking:
1.Whether DARPA can use neuroscientific goals to "understand how we protect, repair, and restore the brains and minds of our fighters,"
2.Where neuroscience technologies can "give fighters an advantage on the battlefield,"
3.Whether neurotechnologies can be used to "develop better technology, teaching and learning tools to augment minds and brains," and
4.The possibility of being able to emulate some of the functions of the brain."[8]

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Presidential Address

WORKPLACE MENTAL HEALTH

T. Sudir
President, IPS-Eastern Zonal Branch

Finding a topic for the talk was not an easy one,as i had been advised not to dwell on very technical issues.... which would be addressed during the CME /Guest Lectures....

I have thus chosen to share my views on an area which I feel is an area which needs to get a little more importance than what it is getting now.....

Workplace Mental Health.

Before addressing this issue,I feel we should find an appropriate definition for Workplace

Webster defines *workplace* simply as: "a place (as a shop or factory) where work is done.....

I find Webster's definition to be too narrow and somewhat incomplete. In an economy increasingly dependant on "knowledge workers", work is done any time, and anywhere. A definition of the modern workplace needs to recognize this reality.

This broader definition, will lead workplace development to include the determination of :

- Where work will be done (such as in an office, at home, in a plane or car, or at a conference, all of the above, etc.),
- What processes (such as transaction processing, innovating, communicating, learning, etc) will define the work to be done,
- How technology will enable those processes to be carried out (such as data access, groupware, mobileware, etc.)
- What physical environment will support the work (such as office design and layout, furniture, equipment, temperature, light, etc.)
- When and where people interact to exchange knowledge and information

Definition of a healthy Workplace:

Employee health is now generally assumed to incorporate the WHO definition of health (physical, mental and social) and to be far more than merely the absence of physical disease;

2. A healthy workplace in the broadest sense is also a healthy organization from the point of view of how it functions and achieves its goals. Employee health and corporate health are inextricably intertwined.
3. A healthy workplace must include health *protection* and health *promotion*

I can quite confidently say that hardly anyone in this august gathering has been free from some sort of Stress/.Tension related to their training period,work environment,personal life Etc.etc....However,most of us manage to take this in our stride & get along with life without any major mishap or problem.

On the flip side, there are individuals who are unable to cope with thes stressors thus making them a vulnerable group for Mental Health problems, resulting in poor job performance, affecting their career,productivity of the Organizaion etc,etc....

Why does Workplace Mental Health matter ?

It is increasingly being recognized that the mental health of employees is a crucial determinant in their overall health and that poor mental health and stressors at the workplace can be a contributory factor to a range of physical illnesses like hypertension, diabetes and cardiovascular conditions, amongst others. In addition, poor mental health can also lead to burn-out amongst employees, seriously affecting their ability to contribute meaningfully in both their personal and professional lives.

Data from different countries around the world indicate that mental health problems are a cause of a number of employees dropping out of work. In the Netherlands, around 58% of the work-related disabilities are related to mental health. In the UK, it is estimated that around 30-40% of the sickness absence

is attributable to some form of mental illness.

Mental health problems have an impact on employers and businesses directly through increased absenteeism, negative impact on productivity and profits, as well as an increase in costs to deal with the issue. In addition, they impact employee morale adversely.

Work-related stress is a major cause of occupational ill health, poor productivity and human error. This means increased sickness absence, high staff turnover and poor performance in the organization and a possible increase in accidents due to human error. Work-related stress could also manifest as heart disease, back pain, headaches, gastrointestinal disturbances or various minor illnesses; as well as psychological effects such as anxiety and depression, loss of concentration and poor decision making.

Mental illnesses, and in particular Common Mental Disorders (CMDs) such as depression , anxiety & substance abuse, are among the most frequent causes of occupational disability .

The burden of CMDs is under-recognised in developingcountries, despite strong evidence regarding its social impact . Depression is expected to be the second mostcommon disorder across the world behind ischaemicheart disease by 2020 and is expected to account for 15%of the total disease burden . Despite this, several population-based studies in developed countries have demonstrated that CMDs are under-recognised and undertreated. According to the Australian National Survey ofMental Health and Wellbeing for example, only 35% ofpeople identified with mental illness sought treatment Furthermore the 12-month prevalence of anxiety disorderswas 9.7% and depressive disorders was 5.8%, yetonly 28% and 40% respectively of individuals soughttreatment . Similarly, according to the NewZealand Mental Health Survey, 58% of those with serious disordersand only 36.5% of those with moderate disorderssought treatment in the preceding 12 months.

What is Workplace Stress ?

Workplace stress has been defined by the WHO as a "pattern of physiological, cognitive and behavioural reactions to some extremely taxing aspects of work content, work organisation and work environment"

There are two key models that have been developed to understand the impact of psychosocial stressors at work.

The first is the demand-control model, which characterises jobs according to the level of demand on the employee and the level of control he or she is able to exert. The combination of high demands and low control is described as job-strain and is associated with the highest risk for developing CMDs . Job-strain is unfairly distributed, as workers in lower skill level jobs are most likely to be affected with depression. Furthermore, other adverse health outcomes have been associated with job-strain, including heart disease and musculoskeletal problems, which in turn add to the impact of psychological stress .

Second, the effort-reward imbalance model characterises jobs according to the balance between the effort made by the employee and the rewards received, which includefinancial rewards, esteem, prospects of promotion and job security . Psychological stress is most associated with employment in which the rewards do not match the effort made.

Measuring and Controlling Work - Related Stress and Improving Mental Well-being at the Workplace

A tool to evaluate the level of work-related stress and the measures to be taken thereof to control the same has been extensively used. This tool which is known as the Work Stress Scale (WSS) allows individuals to assess for themselves the degree of stress faced in the following broad domains:

- relationship problems with superiors;
- bureaucratic constraints;
- work family conflict;
- relationship problems with colleagues;
- performance pressure and
- poor job prospects.

Relationship problems with superiors

The most common reason for office stress is dealing with a difficult boss ,particularly one to firmly believes in the caption..'The Boss is Always Right' !!. But this may be far easier to solve by improving

communication skills. Having a sincere conversation may make a difference. Sometimes, the boss may set unreal targets, where an honest discussion can bring out what deadlines can be met.
Tasks that are not part of an employee role or skill set can also cause stress. Companies often make employees multitask but this could potentially affect their ability to deliver. Communicating with superiors about this matter at the earliest is the best way to resolve this. One area that presents an opportunity for conflict for the personality-disordered individual concerns the hierarchical nature of organizations.

Relationship problems with colleagues

Another reason could be difficult colleagues or co-workers. Dealing with a difficult co-worker can be a bit more difficult as their performance is often pitted against oneself. This again has to be resolved by an amicable discussion, concluded by a mutual agreement. One can explain to the colleague as how a team can have far more benefits than indulging in rivalry. But if things are getting out of hand, it should be brought to the notice of the superior concerned.

Work family conflict

Families are struggling to cope with an increasingly complex world. Individuals are struggling to find the right balance between work and family responsibility. Domestic issues can affect work where balancing work and home by allotting adequate time for both can help reduce stress.

High demand for performance

Unrealistic expectations, especially in the time of corporate reorganizations, which, sometimes, puts unhealthy and unreasonable pressures on the employee, can be a tremendous source of stress and suffering. Increased workload, extremely long work hours and intense pressure to perform at peak levels all the time for the same pay, can actually leave an employee physically and emotionally drained. Excessive travel and too much time away from family also contribute to an employee's stressors.

Job insecurity

Organized workplaces are going through metamorphic changes under intense economic transformations and consequent pressures. Reorganizations, takeovers, mergers, rightsizing and other changes have become major stressors for employees, as companies try to live up to the competition to survive. These reformations have put demand on everyone, from a CEO to a line manager.

Bureaucratic constraints

Organizational size and bureaucratic systems have certain rules and regulations, which are inherent parts of the system to serve as checks and balancing forces. However, they are likely to serve as constraints and stress for managers. Other job stressors include uncomfortable working conditions, job overload, lack of control over the work process and sheer monotony. Decreasing work role ambiguity would reduce job strain and work-related psychological disorders including anxiety disorders.

It would be pertinent to mention here that these issues could be properly addressed if Companies have a clearly articulated workplace policy on mental health.

Tasks ahead & Recommendations:

What is probably needed now is to shift our focus from individuals with SMD's to those with CMD's. The majority of people with common mental disorder, as compared with severe mental disorder, are employed but struggling in their jobs. Neither are they receiving any treatment nor any support in the workplace, thus being at high risk of job loss and permanent labour market exclusion. This implies a need for policy to shift away from severe to common mental disorders and sub threshold conditions; away from a focus on inactive people to more focus on those employed; and away from reactive to preventive strategies
Management, HRD and mental health professionals

have responsibility in improving and addressing workplace mental health issues. Five key areas:

- (1) Prevention & promotion
- Understanding ones organizational needs & identifying potential and existing issues
- Develop prevention and management strategies for psychological health or safety issues in one workplace
- (2) Education to staff on mental illness
- Remove stigma by education on the realities of mental illness
    - Learn mental health coping strategies are strained by stress, burnout, conflict or life events
    - Awareness of mental health resources

Educating Early Warning Signs an Employee is Struggling with

- lateness or frequent breaks away from office
- excessive sick leave & 'presenteeism' (on the job absenteeism)
- reduced quality of work
- high rate of accidents
- withdrawal/avoidance
- employee errors
- missed deadlines
- changes in physical appearance
- confusion or forgetfulness
- employee conflict
- inappropriate behaviour, mood swings, negative attitude
- (3) Manager training to identify and address workplace mental health issues

Effectively recognize and manage mental health related issues in the workplace
Principles and practicalities to manage issues related to employee mental health in the workplace including communication
Managing conflict, performance management, return to work etc.
(4) Early intervention and employee support
Prevention & crisis response
Temporary accommodation
Mental health resources for their employees ....(Psychiatrists/Clinical Psychologists)
(5) Rehabilitation : Return to work process
A healthy workforce is an economically productive one for the Organization.
So, I sincerely feel it is the moral obligation of the Organization to ensure the Psychological well being of its employees . This could only be achieved by having an unbiased mindset & proper liaisioning with Mental Health Professionals.
Before concluding this address,on a personal front (call it subjctive or 'biased'
My experience after two decades in a public sector organization has taught me
some basic tenets : Respecting ones subordinates as a human being & a professional,,by being transparent &,honouring values & ethics should go a long way in overcoming 'unecessary' vested interests which are a prime cause leading to a the birth of a sanctimonious unproductive 'Superior' who is unfortunately, morally responsible for the Mental Health of his subordinates.....

Thank you
&
Long live IPS Eastern Zone Branch!!

Original Article

P300 IN OBSESSIVE COMPULSIVE DISORDER

Neelanjana Paul[1], S. H. Nizamie[2], Anirban Basu[3], K. Jagadheeshan[4]

ABSTRACT

Objective : It has been hypothesized that an unstable arousal system exists in patients with obsessive-compulsive disorder (OCD) and P300 is commonly used to investigate for such information-processing abnormalities. However, studies of P300 in OCD have had inconclusive results, regarding both amplitudes and latencies, along with poor correlation with clinical variables. This study aimed to further investigate the suggested misallocation of cognitive resources and attentional disorder in OCD. **Methodology :** Thirty patients of OCD, taken from the outpatient department of Central Institute of Psychiatry, and 27 age-, sex-, and education-matched normal volunteers were examined in this study. The psychopathology in the patients was evaluated using the Y-BOCS and HDRS scales; GHQ-5 was used to screen the normal controls. P300 was recorded by an auditory two-tone discrimination task in both groups using Neuropack Sigma-8 Nihon Kohden software. **Results :** P300 amplitude did not differ between patients and controls; neither was it correlated with most of the demographic and clinical variables. Patients had a significantly longer latency of P300 especially in frontal areas, those on medication also having a significantly longer latency than those off drugs. However, P300 latency did not vary significantly with sex, age, education, onset, duration, or course of illness, and severity of depression or obsessions & compulsions. **Conclusion :** This study replicated previous ones in showing no significant difference of P300 amplitude in OCD patients compared to controls. P300 latency was significantly increased ($p = 0.035, 0.024$ & 0.044, in Fz, F4 & F3, respectively) in frontal leads, suggesting an electrophysiological abnormality in this part of OCD brain, correlating well with other neuro-imaging and neuropsychological studies that have also implicated the frontal lobe in OCD.

INTRODUCTION

The last two decades have seen remarkable advances in the understanding of the neurobiology of Obsessive-compulsive disorder (OCD) in form of different structural (Behar et al., 1984), (Luxemberg et al., 1988) and functional abnormalities. The latter have been especially well documented as increased glucose metabolism and blood flow of orbito-frontal cortex, pointing to abnormal activation of an orbital frontal - basal ganglia - thalamic loop (Cohen et al., 1997). Neuropsychological tests have suggested impairment in executive functioning, as well as deficits in visual memory, with indication of lateralisation of neuropsychiatric dysfunction as visuo-constructional impairment is more than the verbal ones, suggesting left hemisphere hyperfunction with concomitant right hemisphere hypofunction (Schultz et al., 1999).

1. ICARE Institute of Medical Sciences 2. Central institute of Psychiatry
3. Consultant Psychiatrist, Kolkata 4. Consultant Psychiatrist, Australia

It has been suggested that an unstable arousal system exists in OCD that makes the person vulnerable to rapid and fixed conditioning - implying that patients would show altered information processing in the central nervous system, the evidence of which is sought by examining evoked potential (EP) responses (Beech et al., 1983).

The most commonly used EP in neuropsychiatry is P300 (Barrett, 1993), whose amplitude is directly related to task relevance and difficulty (Altenmuller & Gerloff, 1999); longer P300 components are produced when more attentional resources are allocated to the task stimuli in a given experimental situation (Wickens et al., 1983). P300 amplitude is maximal over the midline central and parietal regions (Oken, 1997), with increased amplitude occurring during better memory performances (Fabiani et al., 1990; Smith et al., 1990). The latency of P300 reflects the speed of stimulus classification, is also related to task difficulty-- P300 latency increases as the task becomes harder, and shows a negative correlation with the level of attention and vigilance. Shorter P300 latency thus implies superior cognitive function in comparison to longer ones (Altenmuller & Gerloff, 1999; Polich, 1999).

The functional significance of P300 is often discussed as per a "context updating model" according to which, it is a manifestation of processes occurring when events necessitate a revision of the individual's internal representation of the outer world. P300 may be thus interpreted as indexing tasks that are required in the maintenance of 'working memory' (Altenmuller & Gerloff, 1999). An alternative approach is the interpretation of P300 as a deactivation consequent upon the closure of a perceptual epoch (Karlin, 1970).

Evoked potentials elicited by visual discrimination tasks in OCD have had inconclusive results, with the amplitudes ranging from being reduced (Ciesielski et al, 1981, Beech et al., 1983) to being larger (Di Russo et al., 2000) in comparison to normal controls. However, auditory oddball paradigm has shown either no significant difference (Okasha et al., 2000), or lessened P300 amplitude (Towey et al., 1994, Sanz et al., 2001) that also increased after treatment (Sanz et al., 2001).

Most studies have shown shorter latencies of EP in OCD using either visual stimuli (Ciesielski et al, 1981, Beech et al., 1983, De Groot et al., 1997) or auditory stimuli (Morault et al., 1997, Miyata et al., 1998). However, there are reports of no significant difference (Okasha et al., 2000), as well as longer latency of P300 in patients (Sanz et al., 2001) that persisted in spite of treatment (Sanz et al., 2001).

Increased tasks difficulty tended to lengthen latency and increase amplitude among normal persons, but not in OCD patients (Beech et al., 1983, Towey et al., 1990) and in fact the latter had significantly shorter latencies in the difficult task (Towey et al., 1990).

Efforts to correlate electrophysiological parameters with different clinical variables have been equivocal, in that some studies have shown no significant correlation of P300 values with severity of symptoms (Miyata et al., 1998), drug status (Ciesielski et al, 1981, Malloy et al., 1988), or age of onset and length of illness (Ciesielski et al, 1981). However, there are also contrary results of P300 amplitude varying with severity of symptoms (De Groot et al., 1997), and a positive shift of P300 amplitude in responders versus non-responders (Morault et al., 1997).

Thus, electrophysiological investigations have suggested misallocation of cognitive resources and attentional disorder in OCD (Di Russo et al., 2000); but most of the above dealt with small sample sizes, and further studies are clearly warranted in view of contradictory results.

METHODOLOGY

Consecutive patients of OCD diagnosed using the Diagnostic Criteria for Research of ICD-10, with age ranging from 18 to 50 years, were recruited from the Central Institute of Psychiatry, Ranchi, after giving informed consent for this cross-sectional and comparative study. Patients having any major medical illness, focal neurological deficits, history of any neurological disease, or any co-morbid psychiatric syndromes other than depression were excluded. However, in the depressed patients, efforts were made to ensure that depression is secondary to the OC-symptoms.

Staff and students of the Institute without any family or past history of psychiatric disorder were taken as normal controls, if they scored less than or equal to one on the General Health Questionnaire-5 (Shamsunder et al., 1986), after matching for age, sex and education. Tools of assessment included: 1) Socio-demographic & clinical data sheet, 2) Yale-Brown Obsessive-Compulsive Scale (Goodman et al., 1989), 3) Hamilton Rating Scale For Depression (Hamilton, 1960), and 4) Handedness Preference Schedule (Mandal et al., 1992).

P300 was recorded using the Neuropack Sigma 8, Nihon Kohden software, the recording conditions and procedure as per standard guidelines suggested by Polich (1999). The subjects were asked to lie down supine, to fixate both eyes at one point without moving eyeballs or eyelids, as immobile and relaxed as possible, and to press a button with the index finger in response to the infrequent target tones. The electrodes (silver / silver chloride discs) were positioned at the sites Fz, Cz, Pz, F4, F3, C4, C3 (recording), FP1 (electrooculogram / EOG), both mastoid (reference) and forehead (ground) on the basis of international 10-20 system of electrode placement, the impedance being kept at less than 2 Kohms.

ERP were elicited using the standard auditory odd ball paradigm - the stimulus being an auditory pure tone of 100 ms duration with a 10 ms rise and fall time, delivered binaurally through a head phone. The frequent stimulus was 1000 Hz (40 dB) and random infrequent stimuli 2000 Hz (55 dB) - their respective probabilities being 0.8 and 0.2. Triggered by the onset stimulus, 800 ms of the EEG epochs were collected for averaging, the record being band filtered between 0.1Hz and 100Hz. Trigger mode was recurrent. The on-line automated artifact rejection supplied by Neuropack sigma 8-Nihon Kohden was applied and trials continued till 10 artifact free registrations of such responses were obtained. Trials were automatically rejected if the voltage exceeded 100uv at any point in the averaging epoch in the EOG lead. Each recording session lasted approximately 30 minutes.

P300 was measured in form of peak amplitude relative to a pre-stimulus baseline and peak latency relative to the stimulus onset. Using the negative-up EEG convention as in most electrophysiological studies in psychiatric literature, the P300 waves were

identified visually as the most positive point in the waveform between 280-500ms-post stimulus, and marked by using the cursor provided by the computer.

The results were analyzed using the computer software program Statistical Package for Social Sciences-Version 7.5 (SPSS-7.5), with different parametric and non-parametric measures being used wherever applicable.

RESULTS

This study examined 30 patients of OCD selected as per inclusion and exclusion criteria and 27 healthy volunteers matched for age, sex and educational status.

Description of Subjects

The patient group included 14 males and 16 females, with ages ranging from 20 to 50 years (mean = 30.97 yrs., SD = ±7.28), and a mean education of 10.83 years (range 0 to 16 years, SD = ±4.03). Fourteen males and 13 females constituted the control group, their ages ranging from 18 to 45 years (mean=29.78 yr., SD=±7.73), with a mean duration of education of 13 years (SD=±4.92). There was no significant difference in age, sex, education, marital status, occupation or socioeconomic background between the two groups. All the patients were right handed, while one person among the controls was ambidextrous.

The age of onset of OC-symptoms varied from 11 to 40 years with a mean of 25.19 years (SD= ±8.25). Onset of symptoms was significantly earlier (p 0.049) in males (mean age of onset 22.05 years, SD=±8.39) than in females (mean age of onset 27.93 years, SD=±7.3). The course of illness was static in 14 patients (46.7%), fluctuating in 11 (36.7%) and deteriorating in 5 (16.7%). Duration of illness ranged from one month to 20 years, mean being 5.78 years (SD=±5.57), with no significant difference between the male and female patients.

Twenty patients (66.6%) were drug-naïve, while 10 (33.3%) were on medications that included SSRIs (Fluoextine, Fluvoxamine), Clomipramine, or a combination of both.

Y-BOCS checklist showed the commonest symptoms to be the obsessions of contamination (n=23, 76.7%) and cleaning or washing compulsions (n=19, 63.3%); 9(30%) patients had mild, 18(60%) had moderate, and 3(10%) had severe OCD, as per the Y-BOCS ratings. Considering the HDRS cut-off levels, the number of patients having none, mild, moderate and severe depression, were 5 (16.7%), 14 (46.7%), 4 (13.3%) and 7 (23.3%), respectively.

Discriminant analysis taking P300 measurements, showed that 11 (36.7%) patients had been misclassified, while the corresponding number among the controls was eight (29.6%). Among the total subject population of 57, 66.7% of the original grouped cases had been classified correctly.

P300 Amplitude

There was no significant difference in P300 amplitude of patients and normal controls **(Table I),** in any of the channels measured (i.e., Fz, Cz, Pz, F4, F3, C4, and C3).

Subanalysis of P300 amplitude among the patients with different demographic and illness variables showed that amplitude at C4 channel had a significant negative correlation with years of education (r = -

0.291 at 0.028 significance level). C3 amplitude showed a trend to be negatively correlated with years of education (r = -0.244, significance=0.067), and positively correlated with illness duration (r = 0.340, significance=0 .066) **(Table II).** There was no significant correlation between course of illness and P300 amplitude. No significant difference was found in P300 amplitude among the patients, when subanalysis was done on the basis of sex or drug treatment.

Table I
Amplitude of P300 in OCD and controls

Channels	OCD (N=30) Mean ± SD	Controls (N=27) Mean ± SD	t	df	p
Fz	8.57 ± 13.62	10.71 ± 9.79	0.69	52.54	0.495
Cz	6.57 ± 7.83	10.26 ± 8.7	1.68	52.65	0.099
Pz	10.66 ± 7.23	12.34 ± 7.21	0.88	54.40	0.384
F4	7.34 ± 11.71	8.45 ± 7.67	0.43	50.43	0.672
F3	7.03 ± 12.32	8.88 ± 8.53	0.67	51.75	0.509
C4	5.0 ± 5.1	8.29 ± 5.65	1.6	52.68	0.116
C3	- 4.77 ± 6.05	- 7.94 ± 7.69	1.72	49.31	0.092

p = ns

Table II
Correlation of amplitude of P300 with patient variables

Patient Variables	Fz	Cz	Pz	F4	F3	C4	C3
Age in years	0.092	0.104	0.107	0.092	0.112	0.085	0.095
Years of education	- 0.133	0.158	- 0.158	- 0.153	- 0.175	- 0.291*	- 0.244
Duration of Illness	0.223	0.181	0.255	0.161	0.271	0.132	0.340
Onset of Illness	- 0.007	- 0.055	- 0.114	0.001	- 0.039	0.002	- 0.173
YBOCS-O	0.117	- 0.059	- 0.118	0.118	0.114	0.040	0.031
YBOCS-C	- 0.070	- 0.267	- 0.280	0.022	- 0.043	- 0.201	- 0.025
YBOCS-T	0.014	- 0.216	- 0.256	0.077	0.030	- 0.118	- 0.001
HDRS	0.249	0.177	0.219	0.201	0.239	0.253	0.198

* $p < 0.05$

P300 Latency

The latency of P300 was found to be longer in the patients in all leads, and the difference assumed significance in all frontal leads (F4, Fz, and F3). In the central leads, latency was significantly more in C4 & C3 and showed a statistical trend to be longer in Cz **(Table III).**

No significant correlation was seen between latency of P300 and the patient variables of gender, years of education, illness duration, or course of illness.

Comparison of who drug-naïve-patients with those on different antidepressants, showed that Fz latency was

Table III
Latency of P300 in OCD and controls

Channels	OCD (N=30) Mean ± SD	Controls (N=27) Mean ± SD	t	df	p
Fz	383.33 ± 79.17	350.52 ± 18.25	2.20	32.4	0.035*
Cz	371.07 ± 68.88	345.26 ± 20.12	1.96	34.42	0.058
Pz	373.53 ± 70.14	349.33 ± 17.02	1.83	32.76	0.076
F4	386.33 ± 82.00	349.63 ± 21.22	2.37	33.27	0.024*
F3	382.40 ± 75.35	352.59 ± 19.48	2.09	33.27	0.044*
C4	381.00 ± 72.01	348.74 ± 19.86	2.36	33.84	0.024*
C3	384.40 ± 80.22	350.07 ± 19.18	2.27	32.65	0.030*

* $p < 0.05$

Table IV
Subanalysis of P300 latency values in OCD patients
(Mann Whitney U Test)

Channels	Drug Naive (n=20) Mean ± SD	On Drugs (n=10) Mean ± SD	z	p
Fz	398.5 ± 86.43	353.0 ± 53.78	- 1.915	0.055*
Cz	381.60 ± 74.68	350.0 ± 52.69	- 1.431	0.152
Pz	383.60 ± 76.45	353.4 ± 53.27	- 0.947	0.344
F4	401.0 ± 88.34	357.0 ± 62.3	- 1.739	0.082
F3	397.80 ± 81.02	351.60 ± 53.41	-1.784	0.074
C4	388.30 ± 77.72	366.40 ± 60.0	- 0.991	0.322
C3	394.30 ± 79.54	364.60 ± 82.03	- 1.894	0.058

* $p < 0.05$

significantly more in the former, with a trend for higher latency in F3 and C3 leads **(Table IV).**

Topographical Distribution of P300

The topographical distribution of maximum P300 amplitude and latency was examined in the patients and in controls. Parietal dominance was seen in both the groups, without any significant difference between them in either of the parameters.

DISCUSSION

The auditory oddball paradigm used to elicit the P300 has a distinct advantage over other sensory modalities for eliciting P300 as they are easily produced, they capture the subject's attention easily without inducing excessive EOG artifacts and the effects of auditory stimulus parameters (tone frequency, duration, rise/fall time, and intensity) have been systematically evaluated (Polich, 1999). This paradigm to elicit P300 in a state-of-the-art machine was one of the strongest points in this study.

This study found no significant difference of P300 amplitude in OCD patients compared to controls, replicating previous ones that found either no difference (Okasha et al., 2000), or statistically insignificant difference (Ciesielski et al., 1981; Towey et al., 1993 & 1994). However, it contradicts

some findings of lower P300 amplitude especially with increasing task difficulty (Beech et al., 1983; Sanz et al., 2001) and greater P300 amplitude (Di Russo et al., 2000) in OCD patients. The significant negative correlation of P300 amplitude in some of the central leads with the years of education may be projected to a wider perspective: one may hypothesize that the difference in results of amplitude between the present study and previous western one actually portrays a difference in educational background of the samples. A replication of decreased P300 amplitude in OCD could perhaps have been possible if the sample population was not drawn from an educationally backward area. The preliminary and isolated finding of positive correlation of P300 amplitude at C4 channel with illness duration, has probably uncertain clinical significance at present, especially, considering that previously no relation was found between P300 amplitude and either medication or length of illness (Ciesielski et al., 1981; Malloy et al., 1988).

The statistically significant increased latency of P300 in all frontal leads suggests that whatever the abnormality in electrophysiology of OCD brain, it was occurring in the frontal area, correlating well with other neuroimaging and neuropsychological studies, that have also implicated the frontal lobe in OCD. Previous studies have shown longer latency in drug-free OCD patients in comparison to normal controls (Sanz et al., 2001) that persisted even after treatment. Contradictory reports exist, with some studies reporting no difference (Okasha et al., 2000) while others show decreased latency (Ciesielski et al., 1981; Oades et al., 1996; Morault et al., 1997; Miyata et al., 1998) in OCD patients. The number of studies having contradictory results to the present one are no doubt more but each of them examined fewer number of patients ranging from 8 and 13 to 23; here the focus was 30 patients and the results do not seem unacceptable, in spite of obvious differences.

Electrophysiological studies have found an increasing latency of P300 with greater task difficulty in controls (Towey et al., 1993; Beech et al., 1983), and one may presume that the increased latency in this study is due to the OCD brain reacting to a task in a way that the normal brain would react only under difficult conditions. Latency of P300 reflects the speed of stimulus classification, resulting from discrimination of one event from another, and these results may show the ambivalence of the patients in deciding which really is the target stimulus. P300 latency is also found to show a negative correlation with the level of attention and vigilance (Altenmuller & Gerloff, 1999; Polich, 1999). Longer P300 latency thus implies inferior cognitive function and poorer attentional capacities in this sample of OCD patients; this may be compared to results of neuropsychological attentional tests where OCD patients performed as well as controls regarding the qualitative aspect in Trail making test-Form B and Stroop test, but took significantly more time to complete the tasks (Martinot et al., 1990).

The lack of correlation with HDRS with P300 latency is especially noteworthy, suggesting that depression per se, did not perhaps colour the results of P300 measurements.

A longer latency in frontal channels of unmedicated patients compared to those receiving antidepressants

showed that the difference between controls and patients is also replicated when the drug status of patients is considered- it appears that the medications(TCA,SSRI or combination)are, electrophysiologically and statistically speaking, bringing the patients closer to the status of normal controls. This was, of course a cross-sectional study, and cannot be used to confirm electrophysiological normalization in patients due to drugs.

The main drawback of this study lies in some of the OCD subjects having significant, albeit secondary depression, and inability to segregate depressive psychopathology from OCD may have coloured the results -- one cannot say confidently that whatever was shown in the study was only due to OC-symptoms and not due to depression. Also, it examined a heterogeneous group of unmedicated and on-treatment patients, with the former including those who were drug-naive as well as those who had been treated previously but were currently drug-free. Inability to control drug status was a flaw here, especially considering the fact that neurobiological correlates were being examined. Recording of P300 was mainly done using frontal and central electrodes, and absence of other electrodes may have made the topographical assessment unsatisfactory.

CONCLUSION

Patients with OCD had a longer latency of P300 in comparison to normal controls, suggesting a lower level of attentional resources that was unrelated to either demographic or clinical parameters, and may be suggestive of a marker of illness per se. The shorter latency in medicated patients compared to those off drugs, point to an elctrophysiological evidence of improved cognitive functioning with pharmacological control of symptoms. Absence of difference in P300 amplitude, on the other hand, may reflect a heterogeneity of population being studied, or just an inability of efficient allocation of cognitive resources in the patients.

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Original Article

MENTAL HEALTH: ADOLESCENTS, THEIR KNOWLEDGE AND ATTITUDE

Prasenjit Ray [1], Amrita Chakraborti [1], Amit Kumar Bhattacharyya [1], Paramita Ray [1], Asim Kumar Mallick [1]

ABSTRACT

Background : The aims of this current study were to prepare and validate a Bengali questionnaire to assess knowledge and attitude of adolescents about the various mental health issues related to them, and to conduct a pilot study with this questionnaire.

Method : It was a cross sectional study conducted on adolescent school girls (N=107, 12 to 18years age) from rural background of West Bengal. A 13 item Bengali questionnaire was constructed, validated and administered on the subjects. Statistical analysis was done using SPSS (16th version).

Results: Most of the items had good test re-test reliability. Mean age of the population was 13.09 years. Three knowledge based questions had more correct responses (50.5%, 52.3%, 50.5%) and one had 72% incorrect responses. Majority of the subjects recognised problem behaviours, expressed an helping attitude, tended to seek help from parents, and thought sharing worries with others and spending time with friends could make them happy.

Conclusions : This questionnaire appears reliable to assess knowledge and attitude of adolescent girls. There is need to inform adolescents about various mental health issues. Attitude to help and a sense of cohesion was conspicuous in this population. A larger and more inclusive study needed to generalize the findings.

Key word : Adolescents, Awareness, Reliability

BACKGROUND

Adolescence and its crisis has been object of amazement and awe since ages. With the recent rise of the instances of problem behaviour like self harm, criminal acts and various risk taking acts by adolescents, especially in our country (Gopi Krishna et al, 2013), it has become necessary to look into the problem through an adolescents'-lens, to know about how much aware they are about the phenomenon of transformation from a child to an adult, about the various changes, challenges and problems typical of this period. Part of this transition is a plethora of changes pertaining to the manner they view the things around them, about others, about themselves. Often these changes become too much for them to cope up with, resulting in various mental health issues like adjustment problems, depression, and self harm behaviours (Patel et al, 2008). At times problems such as pervasive unhappiness and depression, quarrelling, using abusive language and delinquent behaviour in school students, especially at secondary level, have been found to be posing serious threat to proper academic and personality development of the students (Hiremath et al, 2012).

Owing to a number of factors like, the different developmental trajectories for boys and girls, explained by the negative experience of intensification of stereotypical gender roles (Zahan-waxler, 2000) and differences in pubertal development resulting in earlier maturity of girls leading to apparent differences in processes of family

1. Dept. of Psychiatry, Burdwan Medical College

influence, girls during adolescence have a typical pattern of disclosing their inner world and spending time alone or with peers and parents which is distinct from the boys in adolescence (Alsaker, 1996). These, along with cultural practices, often result in problems like excessive anxiety, depression, feelings of low self esteem, avoidant behavior and excessive dependence on others, more in adolescent girls (Garnefski and Dickstra, 1996).

To face the challenges of this critical period, to cope up with the crises and to deal effectively with others with those problems one need to be aware about those issues (Hoven et al, 2008). Inspite of the fact that, gathering information about their awareness of mental wellbeing and their attitude towards mental health problems forms a critical step for behavioural scientists to intervene into those situations, Little attention has been focused on promoting mental health awareness, especially in less economically developed nations where the burden is great (Sherer, 2002; Miranda and Patel, 2005). Studies have suggested that direct targeting of children themselves is ideal for increasing awareness (Bijl et al, 2003; Hoven et al, 2008; Rahman et al, 2000).

As part of 'Adolescence Health Training Program', a joint venture of SarvaShiksha Mission (Dept. of School Education, Govt. of West Bengal) and Burdwan Science Centre (National Council of Science Museums, Ministry of Culture, Govt. of India), adolescent girls from different schools (class 6 to 10) were brought, in batches, in a convention centre of Burdwan (a town in West Bengal) to be addressed about the different problems of adolescence. They attended lectures by Psychiatrists and Gynaecologists on different aspects of adolescents' problems. In an attempt to assess their awareness about mental health a questionnaire was needed. After searching literature a number of questionnaire were found that assesses the problems and problem behaviours of adolescents, though not much was found that assesses the knowledge and attitude of adolescents about the mental health issues that are so particular of their age. This dearth seemed to be more glaring when the target population was adolescent girls coming from rural parts of West Bengal. So one questionnaire was devised in the Department of Psychiatry, Burdwan Medical College, with the purpose of assessing adolescents' knowledge and attitude pertaining to certain common mental health issues of their age.
Before using this questionnaire in larger perspective it was needed to validate this tool and to undertake one pilot study. This pilot study was conducted as a forerunner of another bigger study targeting around 1000-2000 adolescents meant to explore various mental health issues of that age group in order to formulate plans to help them cope up with those problems more effectively.

AIM

The aims of this current study were :

- To prepare a Bengali questionnaire to assess knowledge and attitude of adolescents about the various mental health issues related to adolescence and validate it.

- To conduct a pilot study with this questionnaire on adolescent school girls from rural background of West Bengal.

METHOD

It was a cross sectional study conducted on 107 adolescent school girls from rural background of West Bengal.

Inclusion criteria

- 12 to 18 years old school going girls

- Able to read, write and understand Bengali

- Informed consent from both the girl and accompanying teacher

Exclusion criteria

- Poor comprehension of Bengali
- Disability hindering reading, writing or hearing
- Below average comprehension as assessed on clinical interview
- Unwilling to participate in study

Tools

A data sheet specially devised for this study containing certain personal data (like age, class etc) and Mental Health Awareness Questionnaire

Mental Health Awareness Questionnaire

This questionnaire was devised in the Department of Psychiatry, Burdwan Medical College, West Bengal. Psychiatrists, counsellors posted in Child and Adolescent guidance clinic, school teachers who watch child and adolescent population closely and a number of persons who have adolescent children were told about the project and were requested to submit sample questions (in Bengali) pertaining to mental health issues of adolescents based on their day to day experience. Then based on opinions of senior psychiatrists who attend to child and adolescent population in the OPD regularly, 20 questions from this list were selected and a questionnaire was constructed in Bengali. Then it was presented to the two counsellors posted in Child and Adolescent guidance clinic in the hospital, school teachers and parents of adolescents. Based on the consensus 13 questions were retained in the questionnaire.

Out of these 13 questions, 12 have multiple options to choose from and the last one is open ended. Some of the questions are case vignettes presented in simple words depicting certain situation, followed by choices. Out of these first 12 questions, four (no. 1, 2, 7 and 9) are meant to assess knowledge about mental health issues in adolescence, while eight questions are kept to observe their attitude towards some real life examples related to mental health issues. The subjects are requested to tick one choice for each of the first 12 question that they think right. In the 13th question they are requested to note down up to three ways they think that could help them feel happy.

For each of the knowledge questions one choice is correct and the frequency of correct answers are seen. For the attitude questions the frequency of the choices used by the subjects are observed. And for the open ended question the ideas expressed by the subjects are noted.

Conduction of the study

This pilot study was conducted after validating the questionnaire and after obtaining approval from the ethical committee.

The purpose of the study was explained to the students and their accompanying teacher. Subjects who met the inclusion criteria were taken up in the study. The 13 item Bengali questionnaire were given to the girls, individually, after explaining the procedure to respond to it, before they attended the lecture. They were requested to complete the questionnaire on their own, unaided. Most of the girls returned the completed questionnaire within 30 minutes. After rejecting two data for multiple response in a few questions (from no. 1 to 12) and one data for not being returned, finally 107 samples were retained in this pilot study.

Validation of the questionnaire:

Face validity was determined by a group discussion by experts.

Test-retest reliability was seen by administering the questionnaire on a group of 20 girls of class VIII from a rural school nearby, twice, after a gap of 10 days.

Statistics:

Statistical Package for Social Sciences, 16th version, was used for the analysis of data.
Validation: Test-retest reliability was seen by kappa statistics.

Pilot study: In the pilot study the distribution of age, class and religion in the sample was analysed using descriptive statistics. For the knowledge questions the frequency of correct response was seen by descriptive statistics. For the attitude questions the frequency of using the choices in each question was noted through descriptive statistics. For the last question, i.e., the open ended one, subjects expressed a number of ideas about how to feel happy. So the statements were grouped into eight broad categories, after reaching a consensus by experts. The frequency of responses in each category was seen by descriptive statistics.

RESULT

Test re-test reliability

Eight out of twelve questions from 1 to 12 had kappa value more than 0.7 indicating good test re-test reliability. Questions 2 (0.875), 3 (0.861), 9 (0.886) and 11 (0.914) showed excellent test re-test reliability. Two questions had kappa value slightly less than 0.7 (questions 4 and 5), while the value was not satisfactory for questions 7 (0.596) and 12 (0.490). In question no 13 most of the categories showed good to excellent test re-test reliability, though the category 'no response' had poor kappa
value (0.200) **(Table 1)**

Pilot study

The mean age of our study population was found to be 13.09 years, majority of the girls were Hindu (69.2%) and were studying in class VIII (67.3%) **(table 2).**
While observing the response for the questions pertaining to knowledge **(table 3**) it was found that there were more correct response in questions 1 (50.5%), 2 (52.3%) and 7 (50.5%), though majority gave incorrect responses to question 9 (72%). Only 0.9% of the study population refrained from responding to each of the questions 1 and 9, while for each of the questions 2 and 7 it was 4.7%.

Regardin the questions pertaining to attitude **(table 4),** question no 10 was attempted by all the subjects. 13.1% of the girls did not respond to question no 6, though this number was much less for rest of the questions (from 0.9% to 4.7%). For most of the questions the subjects preferred one particular response over others, more so in questions 4 (86% choice 1) and 12 (81.3%).

In the open ended question most of the girls came out with ideas about how to feel happy (question 13) **(table 5**). Most of their ideas were related to categories 'sharing' (52.3%), 'sports' (43%) and 'food' (39.3%). 9.3% of them refrained from responding to this particular question.

Table 1. Test re-test reliability

	Questions		kappa
1	Adolescence is the period between : Youth and old age/Childhood and old age/Childhood and youth		0.783
2	Being listless, restless, losing temper and feeling guilt for no apparent reason during this period: Is usual/Should not happen/Happens with some but not with others		0.875
3	The problem mentioned in the previous question: Is serious/Nothing could be done about this/Pass away uneventfully with help of friends and near and dear ones		0.861
4	If someone starts having adolescence related problems: One should try to help him out/Avoid him/Avoid discussing the topic with him		0.630
5	Priyanka has consumed poison out of anger after being scolded at home. Her behaviour is: Abnormal/Normal /An ideal way to teach her parents a lesson /An attempt to commit suicide		0.697
6	After failure in exam your classmate Partha has been remaining absent in class for last 3 months. You have come to know that he is depressed. You think: Since he has failed he shouldn't come to school/Depression is a mental illness that needs to be treated/His absence is due to failure. He will become alright without any help.		0.746
7	What, do you think, causes mental illness: Influence of spirit and supernatural elements/Bad karma of past life /Poor hygiene/Heredity /Both environmental and hereditary causes		0.596
8	Your best friend Uma has become withdrawn, remains absent in class frequently and has become irritable for quite some time. You think: It's wise to avoid her/You should complain to teacher against Uma /She is doing this intentionally/She needs help. You should come forward		0.727
9	Reduced sleep and appetite, lack of concentration and excessive worries for a long time is a sign of: Physical illness/Mental illness/Is normal/Undisciplined life		0.886
10	In case you are observing those symptoms mentioned in the previous question in yourself for last one month, you will seek help from: Parents/Teachers/Friends/Doctor/ Fortune-teller		0.839
11	You are upset because of poor performance in exam, in spite of studying hard. You feel unable to speak out your distress. You think you should: Hide your suffering from others/Seek help and support from friends /Should leave home/Should try to calm down through relaxation		0.914
12	How, would you like to describe your relation with parents: They are understanding and supportive/They are supportive, though do not understand you/They do understand you, though do not cooperate/Always oppose you		0.490
13	What, you think, are the ways to remain happy?	Sports	0.700
		Health and Hygiene	0.733
		Food	0.886
		Discipline	0.681
		Sharing, remaining Tension free, Resilience	0.886
		Spending time with friends	0.659
		Others	0.700
		No response	0.200

Table 2. Particulars of the sample

		Frequency (%)
Age in years (Mean: 13.09)	11	6 (5.6)
	12	11 (10.3)
	13	62 (57.9)
	14	26 (24.3)
	18	1 (0.9)
Class	7	27 (25.2)
	8	72 (67.3)
	9	8 (7.5)
Religion	Hindu	74 (69.2)
	Muslim	33 (30.8)

Table 3. Response to Knowledge-questions

Questions (Q)			Frequency (%)
Q1	Adolescence is the period between	no response	1 (0.9)
		correct	54 (50.5)
		incorrect	52 (48.6)
Q2	Being listless, restless, losing temper and feeling guilt for no apparent reason during this period	no response	5 (4.7)
		correct	56 (52.3)
		incorrect	46 (43.0)
Q7	What, do you think causes mental illness	no response	5 (4.7)
		correct	54 (50.5)
		incorrect	48 (44.9)
Q9	Reduced sleep and appetite, lack of concentration and excessive worries for a long time is a sign of	no response	1 (0.9)
		correct	29 (27.1)
		incorrect	77 (72.0)

Table 4. Response to Attitude-questions

Questions (Q)			Frequency (%)
Q3	Perception about adolescence crisis	no response	5 (4.7)
		choice 1	64 (59.8)
		choice 2	17 (15.9)
		choice 3	21 (19.6)
Q4	Intervention in adolescence crisis	no response	2 (1.9)
		choice 1	92 (86.0)
		choice 2	8 (7.5)
		choice 3	5 (4.7)
Q5	Perception about self harm behaviour	no response	3 (2.8)
		choice 1	49 (45.8)
		choice 2	7 (6.5)
		choice 3	25 (23.4)
		choice 4	23 (21.5)
Q6	Perception regarding adolescence depression	no response	14 (13.1)
		choice 1	22 (20.6)
		choice 2	61 (57.0)
		choice 3	10 (9.3)
Q8	Attitude regarding adolescence depression	no response	1 (0.9)
		choice 1	8 (7.5)
		choice 2	21 (19.6)
		choice 3	16 (15.0)
		choice 4	61 (57.0)
Q10	Help seeking in mental illness	choice 1	56 (52.3)
		choice 2	19 (17.8)
		choice 3	9 (8.4)
		choice 4	23 (21.5)
Q11	Attitude regarding Stress management	no response	3 (2.8)
		choice 1	18 (16.8)
		choice 2	35 (32.7)
		choice 3	1 (0.9)
		choice 4	50 (46.7)
Q12	Attitude regarding parental relationship	no response	4 (3.7)
		choice 1	87 (81.3)
		choice 2	5 (4.7)
		choice 3	6 (5.6)
		choice 4	5 (4.7)

Table 5. Response to the Open ended question (question no. 13)

	Categories of responses	*Frequency (%)*
What, you think, are the ways to remain happy?	Sports	46 (43)
	Health and Hygiene	29 (27.1)
	Food	42 (39.3)
	Discipline	30 (28)
	Sharing, remaining Tension free, Resilience	56 (52.3)
	Spending time with friends	29 (27.1)
	Others	34 (31.8)
	No response	10 (9.3)

DISCUSSION

Opinion from different quarter of persons and professionals who deal with adolescents regularly ensured that the questionnaire remains relevant to the target population, as well as, to the culture. Since knowledge and attitude about a problem influence a person's behaviour towards it, questions pertaining to both of these domains were kept in the questionnaire. Having knowledge about adolescents' view of wellness and the ways to it might help us while dealing with their mental health issues (Hoven et al, 2008). So one open ended question was kept to know about the ways, they think, could make them feel happy. A few questions were kept pertaining to stress, depression, anxiety and self harm based on experience from previous studies (Garnefski and Dickstra, 1996; Hoven et al, 2008; Patel et al, 2008; Hiremath et al, 2012). Since majority of the school girls from this part of rural Bengal use Bengali as the primary language of communication the questionnaire was composed in Bengali.

While assessing test re-test reliability, the subjects were given the questionnaire second time after a period of 10 days to minimize repetition of the same responses which could have been a problem had the questionnaire been presented in a smaller gap. The fact that most of the questions had satisfactory to excellent kappa values demonstrates its reliability. Also, the categorization of the responses to the open ended question stands the test of reliability. Poor kappa value of the 'no response' category (question 13) might have resulted from the fact that some of the girls who refrained from responding to this question on first instance responded to it when presented the second time. Acceptability and feasibility was good as none of the subjects refused to respond to the questionnaire and most of them responded to almost all the questions unaided.

From the results it could be observed that though most of the girls answered the questions pertaining to what is meant by adolescence, mood swings during adolescence and cause of mental illness correctly, the difference between frequency of correct and incorrect responses was very less. Regarding question no 9 where common depressive symptoms are elaborated,

a little more than one fourth of the subjects could recognise those to be part of mental illness. Most of them thought these to be arising from reckless lifestyle or some physical illness. Coming to the questions related to attitude, in the question (no 3) that raises the issue of mood swings, most of the girls think that the problem is serious, though next in number are those who think this could be overcome with help of close ones. While on direct question a good number of the subjects failed to recognise depressive symptoms as psychological in origin (question 9), on presenting case vignettes most of them readily identified the problem behaviours and came out with helping attitude (questions 4, 5, 6 and 8). This seems to be in concert with previous observations (Yeap and Low, 2009) where inspite of a lack of knowledge about mental illness most of participants expressed helping attitude. In the question pertaining to self harm (question 5) most of the girls thought this to be problem behaviour, though quite a few of them think this to be a way of expressing grievances against parents. It was also observed that most of them perceive their parents to be understanding and supportive and would seek help from them when faced with problems that think to be illness (questions 10 and 12). Though while faced with academic setback most of the participants preferred to overcome the stressor themselves or to seek support from friends (question 11). This observation supports the findings of studies by Patel et al (2008), Yeap and Low (2009) and Gopi Krishna et al (2013) where the subjects chose parents and friends as first point of contact to seek help.

Thus, it appears that adolescent girls, though have limited knowledge about adolescence, about mental health issues related to this period, they do identify when someone is in trouble and expressed readiness to help. They expressed reliance and grievances about their relation with parents, and at the same time wanted to seek help from parents and friends when faced with some problem. This observation could be explained in the light of the theories dealing with conflicts of adolescents (Smetana et al, 1995). This comfort zone with near and dear ones was further emphasized in their response about how to remain happy (question 13). Most of them thought that sharing worries with friends, parents and others they feel close to; not worrying too much and resilience ('remaining calm in face of problems', 'mental strength' etc) could help them to be happy. Those observations highlight some of the aspects of positive mental health (Patel et al, 2008). Though insignificant from statistical point of view, yet quite striking an observation was that two of the girls thought one can be happy if he/she can love others. A good number of opinion came in favour of games and sports as a way to remain happy. While a conspicuous number of the participants thought food can make them happy. This could be explained by the construct of 'Societal indicators of positive mental health' (Patel et al, 2008) that mentions 'adequate food' along with some other factors.

Conclusion

This questionnaire appears to be a reliable tool to assess knowledge and attitude of our target population (adolescent school girls from rural background) regarding various common mental health issues related to adolescence. From the pilot study it could be concluded that acceptability and feasibility of this tool is satisfactory. Based on the responses it appears that there is a need to discuss various mental health issues related to adolescence to this population. This study exposed some the strengths of our adolescent population, like, an attitude to help and a sense of cohesion, as well as some of their concepts of remaining happy.

The current study population did not include males, as well as, girls who were not going to school. Before generalizing the findings of this pilot study on adolescents larger and more inclusive studies need to be conducted.

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Original Article

PREVALENCE OF SEXUAL DYSFUNCTIONS IN MAJOR DEPRESSIVE DISORDER AND ITS RELATION TO QUALITY OF LIFE

Rajarshi GuhaThakurta[1], Om Prakash Singh[2], Sreyashi Sen[3], RanjanDas[4]

ABSTRACT

Background : Adequate sexual expression is an essential part of many human relationships, and may enhance quality of life and provide a sense of physical, psychological, and social well-being. Epidemiological and clinical studies show that depression isassociated with impairments of sexual function and satisfaction, even in untreated patients. Most antidepressant drugs have adverse effects on sexual function, but accurate identification of the incidence of treatment-emergent dysfunction has proved troublesome. However, few investigators have reported the base rate for disturbances in sexual desire, arousal, and orgasm or ejaculation in patients with major depressive disorder (MDD) prior to antidepressant treatment. The purpose of this study is to define the frequency of sexual dysfunction (SD) in 60 patients with MDD and examine the relationship between SD and quality of life enjoyment and satisfaction variables. ***Materials and Methods :*** A consecutive series of 24 male and 36 female MDD patients diagnosed by SCID-DSM IV assessment completed a series of psychometric measures including a Sexual Function QuestionnaireASEX (Arizona Sexual Experience Scale) which asked about change in sexual interest and function as well as quality of life of life enjoyment using QLESQ-SF. ***Results:*** Over 33.33% of men and 42% of women reported decreased sexual interest. Reduced levels of arousal were more common in both men and women (8-22%) than ejaculatory or orgasm difficulties (1116%). In women, SDs were more than males. Quality of life was more impaired in sample with SDs than those without dysfunction showing significant impact of SD on quality of life. ***Limitation and Conclusion:*** Although limited by a relatively small sample of drug-free patients with MDD, and by the absence of a non-depressed comparison sample, these results emphasize the importance of factors beyond specific drug effects in the assessment of SD in drug naive-depressed patients.

Keywords: Impairment, major depressive disorder, quality of life, sexual dysfunctions

INTRODUCTION

Sexual functioning is influenced by a number of factors, mental illness being one of them. Sexual dysfunctions (SDs) are characterized by disturbances in sexual desire and in the psychophysiological changes associated with the sexual response cycle in men and women.[1]

Using the measure of disability-adjusted life years, it was determined that unipolar major depression was the fourth leading cause of disease burden in the world. It was also projected that, in the year 2020, unipolar major depression would be the second leading cause of disease burden in the world.[2]

Majordepressive disorder (MDD) is characterizedbyloss of interest, reduction in energy, lowered self-esteem, inability to experience pleasure, this constellation of symptoms may be expected to produce difficulty in sexual relationship. Depressed patients have shown SD two to

1. Department of Psychiatry, CNMCH , Kolkata, 2.NRS Medical College and Hospital,
3. Anaesthesiology, Calcutta Medical College, Kolkata, 4. Dept. of Psychiatry, RGKMCH, Kolkata

three times more than non-depressed individuals.[3]

Quality Of Life (QOL) is a multidimensional construct to include subjective well-being and life satisfaction. Subjects with affective disorders have significant QOL impairmentalthough the degree of dysfunction varies.[4]

SD in patients with MDD has mostly been studied independently or in gender-specific studies. These studies have reported significant dysfunction in different areas of sexual functioning. However, amajority of these studies are uncontrolled and provide limited evidence about the baseline rates of dysfunction across MDD. Furthermore, patients in affective disorders are usually prescribed antidepressant medications, which are known to cause substantial SD. Simply exemplifying the dysfunction caused by medications is imperfect unless the dysfunction caused by the disease is clearly demarcated. SDand QOL in MDD have mostly been studied independently or in gender-specific studies. Most studies have highlighted the role of drugs used in the class of affective disorders which cause substantial SDs.[5]

In India, most of the studies have focused on male SD, very few have voiced the female SD.[6]
Thus, limited data exist on SD and QOL in MDD in Indian Literature in rural or urban settings.
The *aim* of the present study was to assess the sexual functioning in drug-free MDD subjects and to investigate the association with QOL domains.

METHODS AND MATERIALS

The present study was a single center, cross-sectional, single interview study that was approved by the institutional ethics board.All the first-time registered patients were screened with the Psychiatric Diagnostic Screening Questionnaire (PDSQ).[7]

Subjects of either sex aged between18 and 65 years fulfilling the criteria for MDD were included.All subjects were interviewed by using the Structured Clinical Interview for DSM-IV-TR Axis I Disorders, Research Version, Patient Edition (SCID-I/P) and Structured Clinical Interview for DSM-IV Axis II Personality Disorders (SCID-II).[8] A detailed history was obtained and a physical examination, consultation liaison (when required), and laboratory investigations (where indicated) were performed to rule out any physical comorbidity.

The selected cases fulfilling the selection criteria for MDD were rated for severity of illness with the 17-item Hamilton Rating Scale for Depression (HAM-D).[9]

Sexual experience of subjects was assessed by using the Arizona Sexual Experience Scale (ASEX),[10]a self-ratedinstrument for both genders. The ASEX rates sexual experience in the areas of desire, excitement, penile erection/vaginal lubrication, orgasm, and satisfaction from orgasm on a scale of 1 to 6. SD is defined as having either a score of 5 or more on any item or a total score of 19 or more.The patients were then evaluated for impairment in QOL using QOL Enjoyment and Satisfaction Questionnaire-Short Form (QLES-Q-SF).[11] Higher scores on the QLES-Q are indicative of greater enjoyment or satisfaction. Scoring on all scales were administered by a psychiatrist and recorded. After screening 104 subjects, 60 subjects were included on giving written consent.

The exclusion criteria for all subjects included having comorbid Axis I and Axis II disorders (excluding tobacco dependence) on SCID-I/P and SCID-II; psychotic symptoms; history of SD prior to present episode of illness; endocrinal disorders (thyroid dysfunctions, diabetes); local genital problems (vaginitis, pelvic infections); hypogonadism; cardiovascular disorders (angina, myocardial infarction); renal dysfunctions; neurologic disorders (stroke, spinal cord lesions, pelvic autonomic neuropathy); intake of any psychiatric medication in last 1 month; and pelvic and abdominal surgeries in past, known to be causing SDs (oophorectomy, operations for prolapse). The subjects were excluded

if any of the above-mentioned physical disorders were present in last 3 months.
The data was pooled and statistical analysis was done using SPSS version 20 (SPSS Inc., Chicago, ILL).

Chi square tests, two sample *t*-tests,and correlation analysis using Pearson's correlation wereperformed where necessary. In all these analyses, two-tailed level of significance was set at $P<0.05$ and confidence interval (CI) at 95%.

RESULTS

Table 1 describes the demographic and clinical characteristics of the subjects participating in the study. The overall sample (n = 60) had a mean ± SD age of 38.0 ± 10.53 years. 60% of the subjects were female (n=36). Most of the subjects were from a rural background (n=48), while 20% were from urban areas. 88.3% of the subjects were married. The mean ± SD of duration of illness was 14.26 ± 8.25 months.On rating for severity of depression, the overall sample had HAM-D mean ± SD 19.35 ±3.96, with higher mean scores on HAM-D for females 19.97 ± 4.10.

Characteristic	**Male (*N*=24)**	**Female (*N*=36)**
Age (mean ± SD)	38.75±9.53	37.50±11.15
Duration of illness(months)	13.88±8.61	14.51 ± 8.11
Religion		
Hindu	41.7%	50.0%
Muslim	54.2%	36.1%
Christian	4.2%	8.3%
Sikh --	5.6%	--
Marital status		
Married	83.3%	91.7%
Single/widowed	16.7%	8.3%
Residence		
Rural	79.2%	80.6%
Urban	20.9%	19.4%
Family		
Nuclear	51.1%	77.8%
Joint	48.9%	22.2%

SD was reported in 71.66% of the subjects (*n*=43). Table 2 depicts the gender wise distribution of SD across all the domains. In males, total dysfunction was present in 66.67% of the subjects, low desire in 33.33%(*n*=8) was most frequently reported followed by difficulty in sustaining penile erection (*n*=7, 22.23%). Arousal and excitement problems were less reported. The mean ± SD ASEX scores in males were 18.71 ± 3.67.

Females reported higher rates of dysfunction spanning all domains with total dysfunction in 75% (*n*=27) of subjects. Figure 2 depicts the gender wise and domain wise distribution of SD. In female subjects, low desire 41.67% (*n*= 15) was the most common reported abnormality followed by arousal and excitement problems 22.2%(*n*=8). The mean ± SD ASEX scores in females were 18.78 ± 3.12.

The overall sample had dysfunctions in the domains of desire 38.33% followed by dysfunctions in penile erection/vaginal lubrication 23.3%.

To study the impact of depression on SD,a two sample *t*-test was done (*t*=14.12, *P*=0.000) showing that mean HAM-D scores were significantly higher in the SD group.

On correlation analysis, to examine the relationship between mean HAM-D and ASEX scores, HAM-D scores correlated significantly with all ASEX items except erection/lubrication (*r* = 0.15, *P*=0.257). Total HAM-D scores correlated positively with total ASEX scores significantly (*r*= 0.817, *P*<0.000).

To study the relationship of SD on QOL raw scores on QLES-Q-SF were converted to % maximum scores. Subjects without dysfunction had mean ± SD (65.24 ± 9.90) compared to subjects with SD (30.63 ± 6.68) the difference being statistically significant (*t*= 13.265, df= 22.0, *P*<0.001). The mean differences on all items of QLESQ-SF were significant statistically in between the groups, helping in assessing the impact of SD on all domains of QOL.

A correlation matrix between HAM-D, ASEX(TOTAL),all items of QLES-Q, and total QLES-Q-SFrevealed total score on HAM-D correlated positively and significantly with duration of illness (*r*=0.579, *P*<0.001), total ASEX scores (*r*= 0.817, *P*<0.000), negatively with all domains of QOL scale and total scores (*r*= 0.849, *P*<0.001).

Similarly, total ASEX scores correlated negatively with all items on QLES-Q-SF and total score (*r*= 0.752, *P*<0.001).

DISCUSSION

The present study aimed to assess the prevalence of SDs in drug-free depressed patients and to evaluate its impact on QOL.

The results from the present study indicate high rates of SD in MDD patients,71.66% which is comparable to the results of Casper *et al*.[12] who found in 132 patients with depressive disorders, loss of sexual interest, characterized by loss of libido, or decrease of sexual desire or potency, was reported by 72% of patients with unipolar depression.[12]Our findings are comparable to Kendurkarand Kaur[13] who in 50 drug naive-depressed patients from India reported 76% baseline rates of SD. The prospective Zurich cohort study shows that the prevalence of sexual problems in depressed subjects (including those with major depression, dysthymia, and recurrent brief depression) is approximately twice that in controls (50% versus 24%). This difference encompassed emotional problems, SD, and both decreased and increased libido. The data in this study are from a group of young people (2835 years) and may not be applicable to older age groups.[14]

Low sexual desire has frequently been reported with MDD as it was reported with the highest mean score in this study with 33.3% males and 41.67% females reporting dysfunctions in the area of desire which is comparable with the findings of Kennedy *et al*.[15] who

assessed SD in a depressed sample of 67 men and 102 women who either had never taken antidepressant medication or had been antidepressant free for at least 2 weeks (5 weeks if they had been taking fluoxetine). They found that 42% of men and 50% of women reported a decrease in sexual drive, 36% of men and 38% of women had a decreased interest in sexually explicit material, and 42% of men and 35% of women had a reduction in fantasizing about sex.

In female subjects, 22.2% reported dysfunction in arousal which was comparable to previous self-reported measures in arousal in 914 women psychotropic medication use, and comorbid anxiety or substance abuse.[16]

Difficulty in erection was the second most common dysfunction in males, 29.16%,preceded by desire problemsin this study which is comparable to the findings of Kendurkar[13] who reported 32% dysfunction in the domains of erection using the same rating instrument in Indian population. A study by Kennedyand co-workers showed similar rates of dysfunction with erection difficulties in 34% of male subjects.[16]

Orgasmic dysfunctions were comparatively lower in this study population but corroborated with the findings of Kennedy and coworkers who found that 22% of depressed men reported delayed ejaculation and 12% had difficulty with premature ejaculation while 15% of depressed women reported difficulty in attaining orgasm.

Comparing our results with that of Kendurkar*et al*.[13] we reported lower rates of dysfunction in males (74% vs 66.7%) and comparable rates in female subjects (78% vs 75%),which could be due to the higher male representation in the previous studies.

The most important finding of this cross-sectional study is the strong correlation between HAM-D scores and all individual items of ASEX scale which is not comparable to results previously documented.[17]

This study found a significant correlation between ASEX and QLESQ-SF in all domains which were negatively correlated, quantifying the strength of impairment in all domains of QOL,enjoyment, andsatisfaction.

The strong negative association between severity of depression andQOL domains are consistent with previous work demonstrating a monotonic gradient between MDD andQOL.[18]

The finding that subjects with SD have statistically significant impairment in all domains of QOL compared to subjects without sexual complaints suggests it is likely that depressive symptoms and sexual problems are linked in a cyclic fashion with one contributing to the other. Concerning SD alone, there is little agreement about its causes, except that it is multiply determined, and that the relationships between SD and mood are"complex and multidirectional."[19-21]

There are certain inherent limitations with this study,firstly the absence of a control healthy group, secondly the small sample size, and thirdly the cross-sectional nature of this study limits the possibility to explore the cause and effect relationship between SD and psychiatric diagnosis. Lastly, since the data were collected from a specific population, the degree to which they represent the general population cannot be commented upon.

The robust nature of this study lies in documenting the baseline prevalence and types of SDs in both genders in MDD without highlighting the role of medication-induced dysfunctions. Also by excluding subjects with onset of SD prior to current episode and those with known physical conditions known to cause SDs an attempt was made to obtain more unambiguous data.

CONCLUSION

This study emphasizes the high rates of sexual dysfunctions in drug-free outpatients of MDD,

involving all phases of sexual cycle with females having greater dysfunction rates. The greater impairment in quality of life in subjects with sexual dysfunction suggests that although various factors contribute to sexual dysfunctions, early recognition of sexual dysfunctions and appropriate treatment of depressed patients with sexual complaints will prevent progression from milder to more severe disorders.

Moreover, early recognition of SD will lead to better choice of antidepressant medication and treatment plan with a better side effect profile and use of pharmacologic antidotes wherever necessary to improve the overall quality of life in MDD.

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Original Article

PREVALENCE OF DEPRESSION AMONG GERIATRIC POPULATION IN AN OLD AGE HOME IN KOLKATA- HIGH TIME FOR US TO TAKE NOTICE.

Abantika Bhattacharya[1], Jhuma Sarkar [1], Baijayanti Baur[1]

ABSTRACT : The objectives of the study were to determine the prevalence of depression in elderly population and also study the sociodemographic correlates of the depressive disorders among the elderly in an old age home in Kolkata, West Bengal, India. It was cross sectional study performed on the elderly subjects of the said centre for 2 months period. A total of 227 elderly individuals of age group of 60 years and above, were interrogated : results were subjected to statistical analysis. Proportions and Chi-square tests were computed. The prevalence of depression in elderly population was determined to be 64.5%. The prevalence of depression in the age group of 80 years and above was found to be 83.3%, 75.3% among males and the highest was found among widowed/divorced/separated groups (95.8%).

Key words: Depression, Elderly, Old age home.

INTRODUCTION

In the Indian context, the proportion of those who are be aged 60 years and above is estimated to be 7.7% for the year 2000, and this proportion is expected to reach 12.6% in 2025.[1] With increasing life expectancy, the proportion of mental disorders specially depression is bound to be on the rise[1]. The future projection shows that mental disorders are projected to increase to 15% of the global disease burden and unipolar major depression could become the second leading cause disease burden after ischemic heart disease especially in high-income countries[2]. The community based mental health studies have revealed that the point prevalence of depressive disorders among the geriatric population in India varies between 13 and 25 percent .According to WHO, the major causes of depression in the elderly are chronic disease and disability, pain, frustration with limitations in activities of daily living - events (widowhood, separation, divorce, bereavement, poverty, social, isolation) and lack of adequate social support[3]. Though depression is the commonest mental health problem in old age, very few old age home-based studies had been conducted in India, to understand the problem.

Lack of such studies specially in urban setting of West Bengal was the drive to carry out the present study to determine the disease burden of depressive disorders and to study the socio-demographic relationship of elderly with depression residing in old age home in Kolkata.

MATERIAL AND METHODS:

It was a an observational institution based cross-sectional study conducted for two months from April to May 2013 in an old age home located in central Kolkata under dept. of Community Medicine, Midnapore Medical College.

The total geriatric population (≥ 60 years) residing in the old age home was included in the study, exclusion criteria being those participants who refused to partake in the interview and those who were severely ill. Out of 250 elderly population, a total of 227 participants were included in the study.

A pre-designed, pre-tested semi-structured schedule containing information regarding the socio-economic status of the individual was used. Presence of depressive disorders was determined using short form of GDS questionnaire.[4] Questions were translated into Bengali and Hindi by the researchers and back-translated into English by another expert.

1. Dept. of Community Medicine, Midnapore Medical College.

The investigators and co-investigator visited the old age home after permission from the head of the institution. Care was taken to ensure privacy and confidentiality of the interview as part of the study. A brief general health check-up of the respondents were conducted at the beginning to establish agood rapport and also to gain confidence. The collected data were tabulated and analysed by using the statistical package SPSS (Statistical Package For Social Sciences) version 17.0. Findings were described in terms of proportions and their 95% confidence Intervals. Chi-square test was applied to study to test for statistical significance.

RESULT

Table 1: Showing socio-demographic characteristics of study participants (n=227)

Characteristics		**Number (Percentage)**
Age (years)	60-69	107 (41.7)
	70-79	90(39.6)
	80-89	30 (18.7)
Sex	Male	162 (71.4)
	Female	65 (28.6)
Marital status	Never married	26 (11.4)
	Widowed/separated/divorced	145 (63.8)
	Currently married	56 (24.8)
Educational status	Literate	221(95.2)
	Illiterate	6 (4.8)
Past Occupation	Service	114 (50.2)
	Business	62 (27.3)
	Unemployed	6 (2.6)
	Homemaker (females)	45 (19.8)

Highest proportion of patients belonged to age group of 60-69 years (41.7%) and above 80 years was the least (18.7%). 71.4% were males and the rest (28.6%) were females. Regarding marital status of the study participants it was found that 11.4% respondents were never married, 63.8% were widowed/separated/divorced while 24.8% o them were currently married.. As high as 95.2% of respondents were literate and the rest just literate or illiterate. As per occupational status, 50.2% of them were previously in service, 27.3% had business of their own, 2.6% had a history of unemployment and 19.8% were home makers.

Table 2: Distribution of GDS 15 scores (n=227)

Depression per GDS score	Number	Percentage (%)
Absent (0-4)	82	35.6
Mild (5-8)	46	20.2
Moderate (9-11)	94	41.4
Severe (12-15)	5	2.8

GDS score revealed that 35.6% participants had no depression (scores 0-4) while as high as 64.4% of the respondents were diagnosed with depression. Among the participants who had depression, 31.7% had mild depression (20.2% of total participants), 64.8% had moderate depression (41.4% of total participants) while 3.5% had severe depression (2.8% of total respondents).

Table 3:Socio-demographic variables and depression(n=227)

Characteristics		Depression present	Depression absent	p-value
Age (years)	60-69 (n=107)	62 (57.9%)	45 (42.1%)	<0.05
	70-79 (n=90)	58 (53.3%)	32 (46.7%)	
	80-89 (n=30)	25 (83.3%)	5 (16.7%)	
Sex	Male (n=162)	122 (75.3%)	40 (24.7%)	<0.05
	Female (n=65)	23 (35.4%)	42 (64.6%)	
Marital status	Never married (n=26)	10 (38.5%)	16 (61.5%)	<0.05
	Widowed/separated/ divorced (n=145)	139 (95.8%)	46 (4.2)	
	Currently married (n=56)	36 (64.3%)	20 (35.7%)	
Educational status	Illiterate (n=6)	4 (66.7%)	2 (33.3%)	>0.05
	Literate (n=221)	141 (63.8%)	80 (36.2%)	
Past occupation	Service (n=114)	84 (73.7%)	30 (26.3)	<0.05
	Business (62)	37 (59.7%)	25 (40.3%)	
	Unemployed (6)	1 (16.7%)	5 (83.3%)	
	Homemaker (females) (n=45)	23 (51.1%)	22 (48.9%)	
Total (in each category)		145	82	

Relationship of various socio-demographic variables and presence of depression showed that 80 years and above had highest prevalence of depression compared to the younger age group ($p<0.05$, statistically significant).

Males were significantly found to be more depressed (75.3%) compared to their female counterparts (35.4%). The widowed/separated/divorced category were found to be mostly depressed (95.8%) followed by the currently married category (64.3%) while the singles were found to be least depressed. The findings were also found to be statistically significant.

Regarding literacy status and depression, the illiterate/just literate group was found to be slightly more depressed than literate group though the findings were not statistically significant ($p>0.05$).
Finally regarding past occupation and depression, the past service holders were found to be mostly depressed while least depression was found among past unemployed group (results statistically significant, $p<0.05$).

DISCUSSION

Studies conducted by several worker had observed the prevelance of depressive disorders to be significantly higher among the elderly belonging to higher age group, as we found in our study[5-7].The prevalence of depressive disorders was similar among the widowed or separated individuals (23.2%) as compared to their married counterparts (20.5%)[6]. Contrast findings were found in our study. Our study findings were also consistent with the previous studies who had documented a \significantly high prevalence of depressive disorders among the widowed individuals[8]. Our study findings were in contrast to another study which showed higher prevalence of depressive disorders among illiterates (25.4%) as compared to literates (19.0%). The difference between the two groups was however, not found to be statistically significant[9]. This study also reported a significantly higher prevalence of depression among individuals with lower level of education. The proportion of housewives affected with depressive disorders was 20.1% while our study found more than 50% home makers were found to be depressed among the females[9].The prevalence of depressive disorders was almost similar among the unskilled(23.1%) and skilled (24.5) labourers[9].
Our study reported contrast findings.

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Hartford Institute for Geriatric Nursing, NYU College of Nursing.
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Original Article

PREVALENCE AND NATURE OF SEXUAL DYSFUNCTION IN PATIENTS OF TYPE 2 DIABETES

Ranjan Das [1], Om Prakash Singh [2], Rajarshi Guhathakurta [3], S. N. Ali [4], Asim Kumar Mallick [5], Amit Bhattacharya [5],

ABSTRACT

Background : Diabetes mellitus is a frequently encountered chronic metabolic disease with various complications throughout its course which causes severe restriction and disability in an individual's life. Diabetes mellitus is a well known cause of sexual dysfunction in both men and women. **AIM:** To study the prevalence and nature of sexual dysfunction in patients with type 2 diabetes.

SETTINGS AND DESIGN : Single centre, cross sectional, single interview.

MATERIALS AND METHODS : A total of 100 patients with type 2 diabetes were included in the study. The patients were assessed using Structured Clinical Interview for DSM IV to diagnose sexual dysfunction. Subsequently the patients were given ASEX scale to evaluate the type of sexual dysfunction. Socio demographic characteristics were assessed using a semi structured socio demographic pro forma.

RESULT : Sexual dysfunction was reported in 48% of the subjects (n=96; 42 males, 54 females). Among them majority had low desire (n=70, 35%) followed by arousal and excitement problem (n=60, 30%).Orgasmic satisfaction, problem with orgasm and erection/lubrication problems were 28% (n=56), 26%(n=52) and 19.5%(39) respectively. There was a significant positive correlation between ASEX scores and HbA1c level (r=0.428, p=0.000) & duration of illness (r=0.304, p=0.000).

CONCLUSION : Our study demonstrates that sexual dysfunction is quite common in patients of type 2 diabetes. Duration of disease and poor glycaemic control further impairs the sexual functioning in patients of type 2 diabetes.

Keywords: Diabetes mellitus, Sexual dysfunction

INTRODUCTION:

Diabetes mellitus refers to a group of common metabolic disorders that share the phenotype of hyperglycemia [1].It is a chronic disease that causes short and long term complications. Diabetes mellitus (DM) is a known cause of sexual dysfunctions in both men and women. Sexuality is determined by anatomy, physiology, the culture in which a person lives, relationships with others, and developmental experiences throughout the life cycle. A healthy

1. RG Kar Medical College and Hospital, 2. Nil Ratan Sircar Medical College and Hospital
3. Calcutta National Medical College and Hospital 4. Central Institute of Psychiatry, Ranchi
5. Bardhaman Medical College and Hospital.

sexual life is one of the major expectations of every one. Sexual dysfunctions are characterized by disturbances in sexual desire and in the psycho-physiological changes associated with the sexual response cycle in men and women [2] .Several studies have reported that DM is associated with a high frequency of sexual difficulties, including erectile dysfunction (ED) in men and decreased lubrication in women [3]. Vascular disease, neuropathy and psychosocial problems [4], hormonal abnormality, decreased somatic sensation among diabetics are known to cause sexual dysfunctions such as reduced sexual desire, poor lubrication, erectile dysfunction, decreased sexual arousal and orgasmic disorder [5].

Erectile dysfunction tends to develop 10-15 years earlier in diabetic men than among non diabetic men. Diabetes mellitus (DM) is also known cause of female sexual dysfunction which occurs in 59.6 % of women with type 1 or type 2 DM [7]. Few studies address female sexuality and sexual dysfunctions in women with diabetes as most of the women are not comfortable talking to their doctors about their sexual dysfunction. Sometimes doctors too find it uncomfortable taking sexual history from female patients, and so for many it remains a silent problem that goes undiagnosed and untreated and affects the quality of life.

The present study aims to find out the prevalence and nature of various sexual dysfunctions in patients of type 2 diabetes mellitus.

METHOD :

The present study was a single centre, cross sectional, single interview study which was carried out in the diabetic clinic of Burdwan Medical College and Hospital. The study was approved by the institutional ethics board. Consecutive type 2 DM patients, newly diagnosed or followed up at the Diabetic Clinic of the institution, who gave valid and informed consent to participate in the study were recruited. Patients with type 2 DM, aged 18- 60 years, with adequate cognitive functioning to understand the nature of questions in the interview and who had a sexual partner were included in the study. Patients with schizophrenia or any other psychotic disorder, or substance related disorder were excluded from the study. Patients with other concomitant physical illness which could affect the sexual functioning or taking drugs (except those drugs which are used in the treatment of diabetes) known to cause sexual dysfunction were excluded from the study. The study was conducted during the period of February 2011 to January 2012 and a total of 100 patients were recruited.

The diagnosis of sexual dysfunction was established by Structured Clinical Interview for DSM IV Disorders, Research version patient edition (SCID-I/P). The patients were classified into 2 groups as having sexual dysfunction or not having sexual dysfunction. The socio demographic characteristics of patients were evaluated by semi structured socio demographic proforma. HBA1c levels that show the blood glucose control over last three months was measured on the day of interview. All patients were assessed for sexual dysfunction by Arizona Sexual Experience Scale. The ASEX is designed to assess five major global aspects of sexual dysfunction: drive, arousal, penile erection /vaginal lubrication, ability to reach orgasm, and satisfaction from orgasm.

STATISTICAL ANALYSIS :

SPSS version 20(SPSS Inc. ,Chicago III) was used for statistical analysis. For comparisons between groups, t-test was used for continuous variables and X^2 test was used for categorical variables. The relationship between ASEX, and other clinical characteristics (duration of DM and HBA1c levels) was assessed by using Pearson's correlation analysis. Significance was determined at $p< 0.05$.

RESULTS:

Among the study participants, 96 patients (48%) met the DSM-IV diagnostic criteria for sexual dysfunction whereas 104 patients (52%) did not have sexual dysfunction in the past month. Majority had low desire (N=70, 35%) followed by arousal and excitement problem (N=60, 30%). Dysfunction in orgasm was found in 26 % of cases (N=52, 26%) and erectile dysfunction or problems in lubrication was found in 19.5 % of cases (N=39, 19.5%). In males (n=83) total dysfunction was 50.6% (n=42). Low desire(37.35%, n=31) was most frequently reported followed by arousal & excitement problems (n=25, 30.12%). Erectile dysfunctions was (18.07%, n=15) least to be experienced by males. In females, (n=104) sexual dysfunction was reported (46.15%, n=54) which was slightly lower than males. In female subjects, low desire (33.33%, n= 39) was the most common reported abnormality followed by arousal & excitement problems (29.9%, n=35). Mean age of patients with sexual dysfunction was found to be 44.67±6.33. The mean age of patients without sexual dysfunction was found to be 45.38±6.21.

Among the dysfunction group, 58 patients were Hindu & 38 were Muslims and among the non-dysfunction group, 39 patients were Hindus & 65 were Muslims. Among the dysfunction group, 69 patients belonged to nuclear family, 27 patients belonged to joint family, 81 from rural background, 15 from urban area and among the non- dysfunction group, 92 patients belonged to nuclear family, 12 patients belonged to joint family, 79 were from rural background and 25 from urban area.

The mean duration of DM in the sexual dysfunction group and non-dysfunction groups was 50.28±42.73 months and 30.45±32.89 months, respectively. The difference in the duration of diabetes between groups was statistically very significant (t= -3.69 P=0.000). Mean HbA1c were 7.97±1.33 and 6.67±1.2 in the sexual dysfunction group and non-dysfunction groups respectively and the difference between groups was also very significant (t= -7.28 p=0.000). Mean ASEX score was also significantly high in sexual dysfunction group (t=-36.25 p=0.000).

Regarding correlation between ASEX scores and other associated factors, it was found that there was a significant positive correlation between ASEX scores with HbA1c level (r=0.428, p=0.000) & duration of illness (r=0.304, p=0.000). So, HbA1c level which is an indicator of long term glucose control has a strong influence for the development of sexual dysfunction in diabetic patient. Higher the score of HbA1c more the chance of sexual dysfunction and ASEX scores correspondingly increase. Similarly as the duration of diabetes positively correlated with ASEX score, more

the duration of diabetes higher the chance of developing sexual dysfunctions.

DISCUSSION

The present study aimed to assess the prevalence and nature of sexual dysfunction in patients of type 2 diabetes mellitus. Sexual dysfunction was reported in 48% of the subjects (n=96) whereas 104 patients (52%) did not have sexual dysfunction in the past month. Among them majority had low desire (n=70, 35%) followed by arousal and excitement problem (n=60, 30%).Orgasmic satisfaction, problem with orgasm and erection/lubrication problems were 28% (n=56), 26%(n=52) and19.5%(39) respectively.

This study was comparable with Newman[7] who established 47% prevalence of SD in women with diabetes. Enzlin[3] showed that the prevalence of sexual dysfunction in a group of patients with type 1diabetes was 27% for women and 22% for men. In males (n=83), total dysfunction was 50.6% (n=42).Low desire (37.35%, n=31) was the most frequently reported followed by arousal & excitement problems (n=25, 30.12%). Erectile dysfunctions were the least reported problem by these male patients (18.07%; n=15). Problem with orgasm & orgasmic satisfaction were 26.5% and 28.9% respectively. Our study was in sharp contrast with the Massachusetts Male Aging Study which showed the prevalence of erectile dysfunction(ED) to be 52%[8]. However other studies estimated prevalence of ED in patients with diabetes ranging from 35 to 75%[9,10]. Vascular, neurological and endocrinological factors play a major role in the pathophysiology of sexual dysfunction in male diabetic patients[11,12,13]. Hyperglycemia is known to decrease testosterone levels in males and thus may contribute to sexual dysfunctions. Diabetes is known to cause atherosclerosis which can reduce the penile blood flow thereby causing erectile dysfunction.

In females (n=104), sexual dysfunction was reported as 46.15% (n=54) which was slightly lower than in male. In female subjects low desire (33.33%, n= 39) was the most commonly reported abnormality followed by arousal & excitement problems (29.9%, n=35) .Disorder of lubrication was present (20.51%, n=24). The disorders of lubrication were reported by least number of patients in this study. Problem with orgasm & orgasmic satisfaction were 25.64% & 27.35% respectively. Most of the previous studies have shown prevalence of female sexual dysfunction ranging from 20% - 60%. This study indicates prevalence of female sexual dysfunctions was consistent with other previous study such as *Enzlin et al* who found prevalence of SD was 27% among 120 women with type 1 DM[3]. In a recent study, Doruk and colleagues compared sexual dysfunction between women with type 1 and type 2 diabetes[14]. In women with type2 diabetes, the prevalence of sexual dysfunction was 42% and the control group was 37%[14]. The most common sexual dysfunction in a study by Unadike was sexual pain disorder (dyspaurenia), lubrication disorder and sexual arousal disorder[15]. Enzlin found sexual arousal, sexual lubrication and pain disorders as the main sexual problem in women[3]. In an earlier study by Jensen, vaginal lubrication was found to be the most common problem[16].Neurological and vascular factors affect the sexual functioning in women just as in men.

The mean duration of DM in the sexual dysfunction group and non-dysfunction groups was 50.28±42.73

months and 30.45±32.89 months, respectively. The difference in the duration of diabetes between groups was statistically very significant (t= -3.69 P=0.000). Mean HbA1c were 7.97±1.33 and 6.67±1.2 in the sexual dysfunction group and non-dysfunction groups respectively and the difference between groups was also very significant (t= -7.28 p=0.000). Mean ASEX score was also significantly high in sexual dysfunction group (t=-36.25 p=0.000). Other studies have also found that longer duration of diabetes is associated with increased sexual dysfunction[15]. In a study carried out by Constance it was found that the risk of erectile dysfunction steadily increased with duration of type 2 diabetes to a nearly twofold greater risk compared with men without diabetes[17]. Previous studies however did not find any relationship between duration of illness and sexual dysfunction[18,19]. The reason behind this may be that the sample size in the earlier studies was small.

Regarding correlation between ASEX scores and other associated factors it was found that there was a significant positive correlation between ASEX scores with HbA1c level (r=0.428, p=0.000) & duration of illness (r=0.304, p=0.000). So, HbA1c level which is an indicator of long term glucose control has a strong influence for the development of sexual dysfunction in diabetic patient. Higher the score of HbA1c more the chance of sexual dysfunction and ASEX score correspondingly increases. However, studies conducted by Enzlin[3], Fatemi[20] and Hayes[21] did not find any correlation between HBA1c level and sexual functioning.

CONCLUSION

Diabetes is one of the most complex chronic medical conditions, that is frequently associated with sexual dysfunctions. Sexual dysfunction in diabetic patients occur in all domains. Sexual dysfunctions may not be reported by the patients and so they might be missed by the clinician. It is therefore necessary that all diabetic patients be screened for sexual dysfunctions. The foremost goal of treatment should be strict glycemic control and to treat sexual dysfunction if they are found. This might just improve the quality of life in diabetic patients.

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Original Article

BURDEN AND COPING OF CAREGIVERS OF MEN WITH ALCOHOL AND OPIOID DEPENDENCE

Nitu Mallik [1], Ranjan Bhattacharyya [2], Supriya Kumar Mondal [3], Kapil Dev Mondal [4], Sumita Bhattacharyya [5].

ABSTRACT :

Introduction : Alcohol & Opioid dependence as well as Schizophrenia causes major distress among the family members and caregivers. **Aims & objectives:** The study aims to compare the socio-demographic parameters, both in families of men with alcohol and opioid dependence, as well as in families of men with schizophrenia, the burden on caregivers and coping strategies. **Material and methods:** Alcohol, Opioid & Schizophrenic group each comprises 30 samples. The information regarding the burden and coping styles were obtained from key relatives. **Results:** Age difference is significant (p=0.02) and majority of caregivers are women (n=75; 83.3%). Most caregivers were married (n=88; 97.8%). There was association of negative symptoms scale score with 'distancing' coping strategy. **Conclusions:** The social support of substance dependence groups is more than that of schizophrenia. Marital status of the patient again demonstrated significant associations with caregiver coping.

Keywords : Coping, Alcohol, Opioid.

Introduction:

Alcohol or drug dependence adversely affects the life of the individual as well as lives of those around him. The psychological and behavioral impact of drug or alcohol dependence is often far greater on the family, than on the patient.[1] Interventions have been successfully used in other psychiatric disorders such as schizophrenia.[2]. Explanations have included "disturbed personalities" of wives, psychosocial models, the "co-dependency" theory, and the "stress-coping" perspective. The concept has been criticized as it focuses too much on the negative aspects on such relationships, and ignores positive aspects as well as the influence of variations in substance misuse patterns.[3]

The stress-coping perspective shifts the focus away from individual pathology to look at the broader context of people's lives underlying this paradigm is a fundamental belief in the active, problem-oriented nature of people.[4,5] Recent researches on stress have been directed toward the identification of variables like psychodynamic defenses, specific coping strategies, social indicators such as income and education, cognitive appraisal and coping resources [6] Anxiety, insecurity and other personality changes have also been reported during similar stressful circumstances.

Aims & objectives :

The aim of this study was to study burden borne and coping strategies adopted by the families of men with substance dependence and to assess burden borne by relatives of men with alcohol and opioid dependence and coping strategies used by them. The study also aims to compare and contrast burden and coping in relatives of men with alcohol and opioid dependence, with relatives of men with schizophrenia. Finally to examine the association between socio-demographic and clinical parameters, burden and coping strategies, both in families of men with alcohol and opioid

1. Medical College, Kolkata 2. Behrampore Medical College
3. Dept. of Psychiatry, Murshidabad Medical College & Hospital.
4. Dept. of General Medicine, Murshidabad Medical College & Hospital.
5. Dept of Dermatology, IPGME & R, Kolkata.

dependence, as well as in families of men with schizophrenia.

Materials & Methods:

Thus, the present study sought to assess the burden borne by, and the coping strategies adopted by families of men with alcohol or opioid dependence. To assess this sample consisted of 3 different groups; the first 2 groups consisted of patients with substance dependence, namely alcohol and opioid dependence patients, while the third group was constituted by patents with schizophrenia. This was based on the assumption that substance dependence could cause burden on the family similar in extent to other psychiatric disorders like schizophrenia. The information regarding the burden and coping styles were obtained from key relatives; such a relative could ordinarily be judged to be experiencing the maximum burden due to the patient's problems.

Sample:

The sample consisted of a total of 90 subjects. There were 3 groups with 30 patients in each group. The study groups consisted of patients with a diagnosis of either alcohol (AD) or opioid dependence (OD). The control group comprised of 30 patients with schizophrenia (SR). All patients were males. Additionally, as part of the study design all 3 groups were also matched for age of patient, and total family income.

Results.

Table 1 - Socio-demographic characteristics of patients

	Alcohol Dependence	Opioid dependence	Schizophrenia	X^2 / F value	P value
variables	AD N=30 Mean(SD)	OD N=30 Mean(SD)	SR N=30 Mean(SD)	(Df)	
Age(years)	34.33(±6.87)	32.56(±6.92)	33.40(±8.79)	2.04(89)#	0.13
Marital status					
Single	5(16.7%)	15(50%)	17(56.7%)	11.38(2)^	0.03*
Married	25(83.3%)	15(50%)	13(43.3%)		
Family income (rupees/month)	2040(±2389.50)	2383.3(±3609.50)	2096.6(±2767.60)	0.11(89)#	0.676
Education (number of years)	10.86(±4.20)	11.26(±3.03)	10.63(±5.56)	0.16(89)#	0.85
Family type					
Nuclear	18(60.0%)	15(50%)	16(53.3%)	0.62(2)^	0.73
Others	12(40.0%)	15(50%)	14(46.7%)		
Locality					
Urban	16(53.3%)	16(53.3%)	20(66.7%)	1.45(2)^	0.48
Rural	14(46.7%)	14(46.7%)	10(33.3%)		

SD=standard deviation; ^=Chi square test; #= ANOVA
*p<0.05;**p<0.01

Table 2 :- Caregivers' socio-demographic characteristics

Variables	Alcohol Dependence (n=30) (AD) Mean (SD)	Opioid Dependence (n=30) (OD) Mean (SD)	Schizophrenia (n=30) (SR) Mean (SD)	X2/F Value (Df)	P value
Age (Years)	35.13(±7.27)	42.06(±12.09)	38.36 (±3.13)	4.08 (89)#	0.02*$
Sex					
Male	0 (0%)	9 (30%)	6 20%)	10.08 (2)	0.06
Female	30 (100%)	21 (70%)	24 (80%)		
Marital Status					
Unmarried	0 (0%)	1 (30%)	1 (3.3%)	1.023(2)	0.60
Married	30 (100%)	29 (96.7%)	29 (96.7%)		
Relationship					
Non-spouse	4 (13.3%)	18 (60%)	16 (53.3%)	15.66(2)	0.001**
Spouse	26 (86.7%)	12 (40%)	14 (46.7%)		

SD=Standard deviation; = Chi square test; #=ANOVA test;
$=Post hoc (Scheffe's test) showed significant differences between AD and OD group.
*p<005; **p<001

Table 3 - Clinical characteristics of the alcohol and opioid dependence groups.

Parameters	Alcohol Dependence Mean (SD) (n=30)	Opioid Dependence Mean (SD) (n=30)	X^2/t test (Df)	P value
Duration of illness (years)	11.87 (±2.51)	10.12 (±3.22)	1.09(58)!	0.28
Age of onset of abuse (years)	20.60(±3.91)	21.98 (±5.83)	1.64(58)!	0.10
Age at substance dependence	29.03 (±5.54)	22.85(±6.46)	3.98(58)!	0.0001**
Severity of illness (SODQ/SOADQ)	27.73(±10.84)	19.66(±11.08)	-	-

= Chi square test; !=Unpaired "t" test
SODQ: Severity of opioid dependence questionnaire
SOADQ: Severity of alcohol dependence questionnaire.

Table 4 - Burden scores in alcohol dependence; opioid dependence and schizophrenia

Social parameters	Alcohol dependence (AD) N=30 Mean(SD)	Opioid dependence (OD) N=30 Mean(SD)	Schizophrenia (SR) N=30 Mean(SD)	Total sample N=90	F value (Df)	P value
Types of burden						
Financial	4.96(±2.87)	4.33(±3.31)	4.53(±3.3)	4.59(±3.15)	0.31(89)#	0.73
Disruption of family routine	5.20(±2.17)	5.40(±2.28)	5.63(±2.48)	5.41(±3.15)	0.26(89)#	0.76
Disruption of family leisure	3.23(±1.86)	3.76(±5.40)	3.86(±2.04)	3.93(±3.52)	1.44(89)#	0.24
Disruption of family interaction	4.83(±2.30)	5.16(±2.42)	3.83(±2.24)	4.60(±2.36	2.67(89)#	0.07
Effect on physical health of others	1.73(±0.98)	1.06(±1.14)	1.33(1.26)	1.33(±1.15)	2.61(89)#	0.07
Effect on mental health of others	2.20(±0.84)	2.30(±1.31)	1.76(±1.07)	2.08(±1.10)	2.08(89)#	0.14
Objective burden						
No burden	6(20.0%)	4(13.3%)	5(16.7%)	15(16.7%)	0.54(4)^	0.96
Moderate burden	18(60.0%)	19(63.3%)	19(63.3%)	56(62.2%)		
Severe burden	6(20.0%)	7(23.3%)	6(20.0%)	19(21.1%)		
Subjective burden						
No burden	5(16.7%)	2(6.7%)	5(16.7%)	12(13.3%)	3.14(4)^	0.53
Moderate burden	15(50.0%)	19(63.3%)	19(63.3%)	53(58.9%)		
Severe burden	10(33.3%)	6(30.0%)	6(20.0%)	25(27.3%)		
Total objective burden score	22.16(±8.53)	23.03(±9.65)	20.96(±9.99)	22.05(±9.34)	0.36(89)#	0.69
Total subjective burden score	1.03(±0.61)	1.23(±0.56)	1.16(±0.69)	1.16(±0.69)	0.78(89)#	0.46

DF: Degree of freedom; ^=Chi square test; #= ANOVA test

Table 5 - Coping styles in schizophrenia, alcohol dependence and opioid dependence groups.

Social parameters	Alcohol Dependence (AD)(I) (n =30) Mean (SD)	Opioid dependence (OD)(II) (n =30) Mean (SD	Schizophrenia (SR)(III) (n =30) Mean (SD	F value (Df=89)	p value	Posthoc test
Types of coping						
Confrontative	8.66(±3.29)	8.66(±2.46)	5.9(±2.20)	10.53	0.000**	III<I,II$
Distancing	7.10(±3.36)	5.43(±3.23)	5.46(±2.52)	2.89	0.06	
Self-controlling	6.9(±2.98)	8.16(±3.14)	6.43(±2.48)	2.89	0.06	
Seeking social-support	7.66(±2.70)	8.33(±3.75)	8.00(±3.33)	0.30	0.73	
Accepting responsibility	3.80(±2.07)	3.00(±2.00)	3.23(±2.35)	1.09	0.33	
Escape avoidance	9.10(±4.31)	9.50(±4.76)	9.83(±3.89)	0.215	0.54	
Planful problem	7.63(±3.93)	8.73(±3.67)	5.46(±3.35)	6.18	0.003*	III<I,II$
Positive reappraisal	10.56(±2.88)	11.30(±3.40)	9.20(±2.86)	3.63	0.03*	III<I,II$
Total ways of coping score	80.66(±19.41)	81.93(±22.00)	80.76(±19.01)	2.75	0.06	

DF: degree of freedom *p <0.05; **p<0.01
ANOVA test; $= post hoc(scheffe's test) showed III<I,II

Results :

The mean age of the total sample was 34.1 years (±7.67). The mean age in the various groups varied from 32.56(±6.92) years in OD group to34.33 (±6.87) years in the AD group. All patients were males. The AD group had more number of married subjects (83.3%). The SR group patients had more of unmarried subjects (56.7%). The OD group comprised of equal number of patients (50%) with the married and unmarried status. As per the Chi-square test these differences between the 3 groups were significant ($p<0.05$). The mean income for the total sample was 2173.33 (±2936.77) rupees a month and it ranged from 0 to 18,000 rupees a month The mean income for the 3 groups varied from Rupees 2040 (±2389..57) in AD group to Rupees 2383(±3609.50) a month for OD group. The education in years for the total sample extended from no education to a maximum of 18 years spent in education. The mean education in number of years for the total sample was 10.92 (±4.35). The same for the 3 groups varied from 10.63 (±5.56) years in patients with schizophrenia to 11.26(±3.03) years in OD group. Most patients (54.4%) belonged to nuclear families. Among individual groups the proportion of nuclear families was 60% for the AD group, 50% for the OD group, and 53.3% for the SR group. For the total sample most patients belonged to urban background (57.8%). Out of the total 90 patients; 52 came from urban locality and 38 from rural background. Among individual groups the proportion of patients belonging to urban backgrounds was 53.3% for alcohol and opioid dependence; and 66.7% for schizophrenia. Significant differences were only obtained on the variable of marital status. None of the other differences between the 3 groups in the variables of age, family income, locality or family type were significant. This is indicated by the results of the ANOVA and Chi square test **(Table 1)**

Most caregivers were spouses (n=52; 57.8%), rest of them were parents (n=36; 40%) and siblings of the patients (n=2; 2.2%), out of the total sample of 90 caregivers. In the OD and SR groups, majority of caregivers were parents (n=18; 60%) and (n=16; 53.3%) respectively. In the AD group, however, the majority of the caregivers were spouses(n=26; 86.7%). The differences between the 3 groups were significant(X^2=1 5.66; df=2; $p<0.001$). Mean age of caregivers for the total sample was 34.10(±7.67) years; the ages ranged from 18 to 47 years. Mean ages for the different groups were 35.13(±7.27) years for the AD group; 38.36(±3.13) years for schizophrenia, and 42.06(±12.09) years for the OD group. Results of the ANOVA showed that these differences were significant (F=4.08; df=89; p=0.02). On post-hoc Scheffe's test, the significant difference was between the OD group and the AD group. Majority of the caregivers (n=75; 83.3%) were women. The proportion of female caregivers in the various groups varied from 70 %(OD group) to 100 % (AD group): Most caregivers were married (n=88; 97.8%).The proportion of married caregivers in the 3 groups varied from 96.7% in the OD and SR group to 100% in AD group. The differences between the 3 groups on the variables of caregiver's sex or marital status were not significant.

The mean duration of illness was 11.87 years (±2.51) for patients with alcohol dependence and10.12 (±3.22) years for patients with opioid dependence. The mean age of onset of substance abuse in AD group was 20.60 years (±3.91) which was less than the mean age of onset in the OD group(21.98±5.83 years). This difference was not significant. The mean age for onset of substance dependence for the opioid. group was 22.85(±6.46) years which was less than that in the alcohol group (mean29.03; ±5.54 years).This difference was significant (t =3.98; df=58; p=0.001). Mean score on the SODQ for OD group was 19.66 (±11.08) with a range from 0 to 40; and for AD group on the SOAD was 27.73(±10.84) with a range from 8 to 47 **(Table 2)**.

The mean duration of illness in schizophrenia group

was 10.10(±6.26) years. The age of onset of illness extended from 10 to 41 years and the mean age of onset was 24.56 years (±7.14). Patients were interviewed and rated on PANSS. The total score varied from 30 to 101, with a mean of 57.16 (±21.52). On the positive symptom scale scores ranged from 7 to 25 (mean=12.93; ±6.42). The mean negative symptom scale score was 16.56 (range = 7 to 25). Scores on the general psychopathology scale varied from 16 to. 53; with a mean of 27.66 (±10.53)

The objective burden mean scores for the total sample were 22.05(±9.34). Moderate burden was seen in 62.2% of the families, severe burden in 21.1% of the families and 16.7% were rated as experiencing no burden **(Table 4)**. The subjective burden mean scores for the total sample were 1.16(±0.69). Moderate burden was seen in 58.9% of families; severe burden in 27.3% of the families, and 13.3% reported no subjective burden. The most common objective type of burden was experienced in the area of 'disruption of family routine' (mean score =5.41; ±3.15), followed by 'disruption of family interactions' (mean score =4.60; ±2.36), 'financial burden' (mean score=4.59; ± 3.15), disruption of family leisure' (mean score=3.95; ±3.52) and 'effect on the mental health of others' (mean score=2.08; ±1.10). The least common burden experienced was 'effect on physical health of the others' (mean score=1.33; ±1.15).

In alcohol dependence group the mean score of objective burden for the AD group were 22.16 (±8.53). Moderate burden was seen in 60% of the families and 20% of the families each were rated as experiencing severe and no burden. The subjective burden mean scores for this group were 1.03 (±0.61). Moderate burden was seen in 50% of the families, severe burden in 33.3% of the families and 16.7% reported no subjective burden. The most common objective type of burden was experienced mainly in the area of 'disruption of family routine' (mean score=5.20; ±2.17) followed by 'financial burden' (mean score=4.96;±2.87), 'disruption of family interactions' (mean score=4.83; ±2.30), 'disruption of family leisure' (mean score=3.23; ±1.86), 'effect on the mental health of others' (mean score=2.20;±0.84) and 'effect on physical health of the others' (mean score 1.73;±0.98).

In opioid dependence group the objective burden mean scores for the OD group were 23.03 (±9.65). Moderate burden was seen in 63.3% of the families, severe burden in 23.3% of the families, and 13.3% were rated as experiencing no burden. The subjective burden mean scores for this group were 1.23 (±0.56). Moderate burden was seen in 63.3% of the families, severe burden in 30% of the families and 6.7% reported no subjective burden. The most common objective type of burden was experienced in the 'area of disruption of family routine' (mean score=5.40; ±2.28) followed by 'disruption of family interactions' (mean score=5.16; ±2.42), 'disruption of family leisure' (mean score=4.76; ±5.40), 'financial burden' (mean score=4.33; ±3.31), 'effect on the mental health of others' (mean score =2.30; ±1.31) and 'effect on physical of the others' (mean score=i 06; ±1.14).
In schizophrenia group the objective burden mean scores for the SR group were 20.96 (±9.99). Moderate burden was seen in 63.3% of the families, Severe burden in 20% of the families, and 16.7% were rated as experiencing no burden.

The subjective burden mean scores for this group were 1.16 (±0.69). Moderate burden was seen in 50% of the families, severe burden in 33.3% of the families and 16.7% reported no subjective burden. The most common objective type of burden was in category of disruption of 'family routine' (mean score 5.63 ±2.48),followed by 'financial burden' (mean score =4.53±3.31), 'disruption of family leisure' (mean score =3.86±2.04), 'family interactions' (mean score 3.83±2.24), 'effect on the mental health of others' (mean score =1.76±1.26) and 'effect on the physical health of others' (mean score =1.33±1.07).

None of the differences on any aspects of burden were

significant between the 3 groups on ANOVA or Chi-square tests. The most common coping strategies used by the caregivers in the total sample (n=90) were 'positive reappraisal' and escape avoidance'. the least common strategy used by them was 'accepting responsibility'. In AD group positive reappraisal (mean score= 10.56; ±2.88) was the most common strategy followed by 'escape avoidance' (mean score= 9.10; ±4.31) , 'confrontative' (mean score 8.66±3.29) and 'seeking social support' (mean score= 7.66±2.70). The least common type was 'accepting responsibility'(mean score= 3.80±2.07).

In OD group as compared to AD group the most frequent methods were 'positive reappraisal'(mean score=11.30±3.40) and 'escape avoidance'(mean score=9.50±4.76). The other common types were 'planful problem solving' and confrontative' type of coping strategy.In this goup again the least common type was 'accepting responsibility'(mean score=3.00±2.00). In SR group the most common type of coping strategy was 'escape avoidance' (mean score=9.83±3.89), followed by 'positive reappraisal'(mean score 9.20±2.86); 'seeking social support', 'self controlling'. The least common type was 'accepting responsibility' (mean score =3.23±2.35) . The significant differences on the ANOVA and post hoc analysis by using the Scheffe's test between the 3 groups were seen in the following strategies-

On comparison between the 3 groups 'confrontative', 'planful problem solving' and 'positive reappraisal' were less commonly used by SR group than the AD and OD group. The substance dependence group scored the highest mean score on total ways of coping. the mean score was 81.93 (SD=22.00) and 80.66(SD= 19.41) for opioid and alcohol dependence group respectively. Schizophrenia group scored similar (mean 80.76; SD= 19.75). There were no significant differences between the 3 groups on ANOVA test on total ways of coping score

Correlations between socio-demographic variables of caregivers with different areas of family burden for the total sample (n=90) showed that caregivers of the higher age experienced more burden in the area of 'disruption in family leisure' than the younger family members ($p<0.01$). Female caregivers experienced more burden in the area of 'disruption in family leisure' than the male family members ($p<0.05$). Marital status and type of relationship to patient did not show any significant association.

Correlation between the socio demographic variables of the patients with different methods of coping for the total sample (n=90) showed that married status of the patient was associated with the following coping strategies. The 'distancing' type of coping was more likely to be associated with married patients than unmarried ones. The 'escape avoidance' type of coping was also associated with married patients than unmarried ones. The married status of the patient was associated with the use of 'accepting responsibility' coping strategy in caregivers. The age of the patient, education level, family income and locality did not show any association with the coping strategies used by caregivers.

Correlation between caregiver's socio-demographic variables with types of coping for the total sample (n=90) showed that female caregivers were more likely to use 'accepting responsibility' coping strategy than the male caregivers. They were more likely to use 'distancing' coping strategy than male caregivers. Spouses were more likely to use 'distancing' coping strategy than nonspouses. Non-spouses were more likely to use 'seeking social support' coping strategy than spouses. Age and marital status of the caregivers did not show any association with the coping strategies.

Correlation between clinical variables of patients with different coping strategies showed an association

between negative symptoms scale score and 'distancing' coping strategy.

Discussions :

The mean age of the subjects for the total sample was 34.1 years. Most of the patients were married in the AD (83.3%) and the OD (50%) groups, a finding that is in resonance with the clinical reality of India. As expected the SR group patients had significantly more number of unmarried subjects (56.7%). Most of the subjects included in the study belonged to nuclear families (54.4%) and urban backgrounds (57.8%). This is the usual profile of patients attending this centre. None of the other differences between the 3 groups in the variables of age, family income, locality or family type were significant.

The majority of caregivers were married (98%) women (83%) who were spouses of patients (58%). The mean age (34 years) of caregivers was similar to that of patients. Significant differences between the 3 groups were seen in the higher mean age of caregivers in the OD versus the AD group. and the greater proportion of non- spouses in the OD (60%) and the SR groups (53%) compared to the AD group (13%). Patients in all 3 groups had been ill for a very long time; average duration of illness for the entire sample was 10.71 years.

Patients in both the AD and OD groups had begun using the substance in their early 20s, but in the AD group there was a lag period of about 9 years before onset of dependence. In contrast, there was less than a year's lag between onset of use and dependence in the OD group, which led to significant differences from the AD group on this variable.
Typology or pattern of burden.

Burden was commonly experienced in 'disruption of family routine', 'of family interactions' and 'family leisure' as well as in the 'financial' sphere. 'Effect on mental or physical health' of family members was comparatively less. Given that all patients in the present study were staying with their families, the finding that 'disruption of family routine', 'interactions' or 'leisure' were among the most common areas of burden, was not unexpected.

The present study is one of the very few ones to document a similar degree of burden even among patients of alcohol or opioid dependence. This finding has several implications. Firstly, it suggests that burden of care of severe and persistent mental disorders cuts across diagnostic categories. Thus the impact of mental disorders on the family is very similar for conditions such as schizophrenia as well as substance dependence. Secondly, it suggests that family interventions that have been used so successfully in reducing burden in schizophrenia can be helpful for families of patients of substance dependence as well. Finally, for clinicians dealing with patients of alcohol/opioid dependence an awareness of the nature of problems faced by families will help then deal more effectively with such patients and their relatives.

Marital status had a significant association with burden, with married patients registering significantly higher levels of burden in the areas of 'disruption of family routine' and 'effect on mental and physical health 'of caregivers. Almost all measures of severity such as the SODQ scores (for opioid dependence), and the PANSS total and burden subscale scores, showed significant associations with objective, subjective burden, as well as several areas of burden. The SOAD scores for patients with alcohol dependence also showed positive correlations with burden scores, though these fell just short of significance. That more severe illnesses pose greater problems for families is a well-established fact reported by authors of several studies .[8,9] The most prevalent model for caregiving has been the 'stress-coping' paradigm. The eventual aim of all studies which examine caregivers coping styles is to develop ways to help families adopt more adaptive ways of

coping.[10]

Family members in the present study were using a wide variety of strategies, both problem- and emotion-focused to cope with the patient's problems. Studies among relatives of patients with other psychiatric disorders have also revealed the use of a similar broad range of coping strategies, suggesting an adequate repertoire of coping skills in carers.[11,12] The two most common strategies used by all caregivers were 'positive-reappraisal', an adaptive strategy and 'escape-avoidance', a non-adaptive one. The least common strategy being employed was 'accepting responsibility' which was also a less adaptive coping method.

The groups of alcohol, opioid-dependence and schizophrenia differed significantly on the use of 3 coping strategies by relatives. Caregivers of patients with alcohol/opioid dependence were using 'planful-problem-solving' and 'positive reappraisal', both adaptive problem- focused methods, significantly more frequently than caregivers of schizophrenia patients. Simultaneously, relatives of patients with substance dependence were also using 'confrontation', a less adaptive method, significantly more often than relatives of schizophrenia patients. The reasons for these differences were not clear, especially since there were no significant differences between the 3 groups on other parameters such as family burden and illness related dysfunction, and only minor differences in demographic variables. One possibility as some authors have suggested is that something intrinsic to schizophrenia such as its chronic disabling nature could lead to more impaired coping among caregivers. [13]

A considerable extent of burden was found in the families of the entire sample of patients, as reflected in the high mean scores of objective burden (average 22.05) and the high proportion of families (83%) experiencing moderate or severe burden. An unusual finding of this study was the high levels of subjective burden reported by families, which is contrast to what has been reported earlier.[14]

Marital status had a significant association with burden, with married patients registering significantly higher levels of burden in the areas of 'disruption of family routine' and 'effect on mental and physical health'of caregivers. The burden in the area of 'family leisure' was also significantly more among female, rather than male caregivers. Burden in the area of 'family leisure' was also more in elderly caregivers, who probably have limited opportunities for leisure to start with. 'Financial burden' was significantly greater among rural than urban families, probably as a result of extra expenses on treatment such as travelling to hospitals etc.

Here the significant association was between severity of illness and amount of burden. Almost all measures of severity such as the SODQ scores (for opioid dependence), and the PANSS total and burden subscale scores, showed significant associations with objective, subjective burden, as well as several areas of burden. The SOAD scores for patients with alcohol dependence also showed positive correlations with burden scores, though these fell just short of significance. That more severe illnesses pose greater problems for families is a well-established fact reported by authors of several studies .[39'43]

Higher levels of dysfunction showed significant associations with total objective and subjective burden scores, as well as higher burden in the areas of 'family routine', 'family interactions' and 'effect on physical health of others'. Levels of dysfunction are among the most important determinants of burden, and dysfunction / disability levels predict higher levels of burden even more than clinical variables .[15,16,17]

Marital status of the patient again demonstrated significant associations with caregiver coping, caregivers of married patient were more likely to use (non-adaptive) strategies such as 'distancing', 'escape-avoidance' and 'accepting responsibility', Two of these strategies i.e. 'distancing' and 'accepting

responsibility' were also significantly more prevalent among female caregivers, and caregivers who were spouses. These facts suggest that as a group married women were coping less effectively with problems posed by their husband's condition.

Conclusions

There were several limitations pertaining to this study. The time bound nature of the study dictated a small sample size. All patients were males and hospital attendees. The restricted nature of the sample means that the findings are not readily applicable to other populations. Several mediators such as appraisal, expressed emotions etc were not assessed. Subjective burden was assessed globally. The assessments of burden and coping were cross-sectional and non-blind. All information was obtained from a single relative. The present study attempted to study the burden borne by and coping strategies adopted by families of men with substance dependence. For this purpose 3 groups were chosen with 30 patients in each group. The first group consisted of patients with alcohol dependence. The second group comprised patients with opioid dependence and the control group constituted of patients with schizophrenia. Despite the above shortcomings the present study assesses various aspects of burden amongst caregivers in these groups which is unique in Indian scenario.

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CME

ASSESSMENT PRIOR TO SEX RECONSTRUCTIVE SURGERY.

Asim Kr. Mallick [1], Rajarshi Guha Thakurta [2], S.N Ali [3]

INTRODUCTION :

The transsexual phenomenon has been mentioned from time to time in recorded history. Indian mythology has in it, many references to altered sexual states[1]. The name Ardhanarishwara refers to God, who is half man and half woman, an androgynous deity. In various versions of Ramayana, there is reference to King Ila,who spent half his life as man and half as woman. In Mahabharata, Arjuna,one of the fiercest warriors of his time, spent ayear of his life in intersexed condition. There is also reference to King Bangasvana, who was changed into a woman by Lord Indra, whom he had offended. Another reference during Mahabharata is to Shikhandini. He was born female, but raisedlike a man and trained in warfare. After an encounterwith a Yaksha, Shikhandini came back as a man, was called Shikhandi and fathered children.

Harry Benjamin (1885-1986) recognized transsexualism, treated hundreds of patients and established the modern scientific management of this condition[2].

In 1979, Harry Benjamin's International Gender Dysphoria Association (HBIGDA) was founded. They established the transsexual Standards of Care (SOC's) and established the criteria for diagnosis, management and surgery[3]. The World Professional Association for Transgender Health (WPATH), formerly known as the (Harry Benjamin International Gender Dysphoria Association, HBIGDA), is a professional organization devoted to the understanding and treatment of gender identity disorders.

While 'sex'represents physical differentiation as male or female, indicated by theexternal appearance of genitalia and the presence of gonads, 'gender' is the psychological recognition of self, and wish to be regarded by others, as fitting into the social categories such as boy/man or girl/woman. In short, sex is what one is seen as (external appearance as male/ female) and gender being the identity is what one feels (playing the role of and living the life of male/ female).

TREATMENT OPTIONS :

Feminizing/masculinising hormone therapy will induce physical changes that are more congruent with a patient's gender identity[5]. Treatment options include voice and communication therapy to help clients adapt theirvoice and communication in a way that is both safe and authentic, resulting in communication patterns that clients feel are congruent with their gender identity and that reflect their sense of self.

1. Dept. of Psychiatry, Burdwan Medical College & Hospital.
2. Calcutta National Medical College & Hospital.
3. Central Institute of Psychiatry, Ranchi

SURGERY:

One of the pre-requisites for gender reassignment surgery includes a firm diagnosis for the transsexual condition[6]. Thecriteria for these are:

1. A sense ofdiscomfort and inappropriateness about one's sex.
2. A wish to be rid of one's genitalia and the desire to live life as a member of the opposite sex.
3. This discomfort/disturbance has been continuously present for a minimum of 2 years and is not limited to aperiod of stress.
4. An absence of physical intersex or genetic abnormality.

All assessments should include a thorough physical exam, including weight, height, and blood pressure. This also includes breast, genital,and rectal exams, which are sensitive issues for most transsexual, transgender, and gender-nonconforming patients, and should be based on individual risks and preventive health care needs.

Hormonal Therapy for Adolescents: Hormonal treatment should be conducted intwo phases only after puberty is well established.

1. In the initial phase, biological males should be administered an antiandrogen (which neutralizes testosterone effects only) or an LHRH agonist (which stops the production of testosterone only). Biological females should be administered sufficient androgens, progestins, or LHRH agonists (which stops the production of estradiol, estrone, and progesterone) to stop menstruation.
2. Second phase treatments--After these changes have occurred and the adolescent's mental health remains stable, biologic males may be given estrogenic agents and biologic females may be given higher masculinizing doses ofandrogens. Second phase medications produce irreversible changes.

Prior to Age 18

In selected cases, the real life experience can begin at age 16, with or without first phase hormones. The administration of hormones toadolescents younger than age 18 should rarely be done.Monitoring for adverse events should include both clinical and laboratory evaluation. Specialists may include speech-language pathologists, speech therapists. Surgeryparticularly genital surgeryis often the last and the most considered step in the treatment process for gender dysphoria.In ordinary surgical practice, pathological tissues are removed to restore disturbed functions, or alterations are made to body features to improve a patient's self image[8]. Typical elective procedures involve only a private mutually consenting contract between a patient and a surgeon.

Genital and breast/chest surgeries as medically necessary treatments for gender dysphoria are to be undertaken only after assessment of the patient by qualified mental health professionals.The number and sequence of surgical procedures may varyfrom patient to patient, according to their clinical needs. Genital surgical procedures for FtM female to male) patients may include hysterectomy,salpingo-oophorectomy,vaginectomy,metoidioplasty,scrotoplasty, urethoplasty, placement of testicular prostheses, and phalloplasty. Surgical complications of MtF (male to female) genital surgery may include complete or partial necrosis of the vagina and labia, fistulas from the bladder or bowel into the vagina, stenosis of the urethra, and vaginas that are either too short or too small for coitus. Another aspect is the consent for the procedure and safeguarding the

surgeon or the gender team from future litigation. Though waiver of liability, spousal release and parental consent forms are available, there is an absence of legal backing.At completion of GAS, a Gender Certificate shouldbeissued to the patient by the gender team consistingof the operating surgeon, psychiatristand endocrinologist.

Though GAS has been legally allowed in U.K. since 1967, in U.S.A. since 1972, and invarious other countries, Indian Laws are silent on the issue[8].Renewed efforts are necessary from the Indian lawmakers in this regard.

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Case Report

A RARE AND UNUSUAL SYMPTOM OF DEPRESSION

K.Shantibala Devi[1], Nelson L[2]

ABSTRACT

In depression, the domain involved includes depressed mood, anhedonia, cognitive disturbances, psychomotor disturbances, vegetative symptoms and frequently encountered anxiety symptoms. In this case of depression there is depressed mood, associated signs and symptoms of depression with acute situational distress. The unusual and unique presentation of emission of foul smell during a particular situation is clearly not a delusional disorder as it has been corroborated by her spouse and colleagues. Is there an explanation for it?

INTRODUCTION

Depression may be interpreted as a consequence of longstanding hyperactivity of the stress- system due to corticotrophin releasing hormone (CRH) overdrive, hyperactivity of the adrenergic system, and the glucocorticoid hormones circulating in excess.
In depression, there are varieties of associated emotional reactions to actual or anticipated loss, feelings of distress and sorrow arising from adversities and vicissitudes of life (costa N Stefanis and Nicholas C. Stefanis 2002)

Like many other mental disorders several symptoms present in depression are changeable over time. Basically depression signifies a mood state, a complaint reported as well as syndrome defined by operational criteria. There is sadness, low morale, misery, discouragement, hopelessness, emptiness, unhappiness, distress, pessimism and other related affects. Anhedonia, cognitive disturbance characterised by low self esteem, and low confidence, negative thoughts, suicidal thoughts etc. psychomotor disturbance, vegetative symptoms and anxiety symptoms are associated conditions.

In depression, anxiety disorder is frequently encountered and becomes an integral part of its clinical picture (Costa N Stefanis and Nicholas C. Stefanis 2002).
The stress that leads to distress evokes response known as the general adaptation syndrome which was described by Selye, 1936. It comprise of three phases, the first being the alarm phase (changes in B.P, heart rate, circulating glucose levels and electrolyte balance and shock response (increase release of corticosteroids, adrenalin). The second phase appears if the stress persists called the resistance phase. There is increased adaptation but more susceptible to noxious effects of the stressors. The phase of exhaust would be reached if the exposure to the stress continues where there is a pathological change in the immune system and GIT which may be fatal.

In depression there is an array of physical, physiological and psychological symptoms and involvement of neurotransmitters and imbalance in circulating chemicals/substance such as glucose, electrolytes, corticosteroids and adrenalin.
In this case there is an additional symptom of release of chemicals from the body elicited as foul smell lasting for few seconds.

THE CASE

Mrs A Devi aged 49 years, a government employee first came to consult about her son, aged 18 years, 2nd of two siblings, reading in 12th class for certain changes seen in his behaviour which the mother sees it as deviant and became a cause of concern and anxiety. According to her, the son appears to rebel in everything such as choice of friends and not adhering to things which he apparently followed earlier. The mother aggressively followed and monitored her son's activity which became a point of conflict and the

1. , 2. , J N Institute of Medical Sciences, Imphal

son clearly showed his irritation by switching off mobile phone and hanging out with friends most of his leisure time. The mother felt very distressed as she feels the son is out of her control. After passing 12th with good grades, the son got admitted in a good technical institute (engg.). But after a few months he lost his interest and instead wanted to go for medical, which he informed the parents. The parents refused to listen to him regarding the change in career. The son too refused to attend classes and requested the parents to remove from the institute so that he can give a try for medical course as he feels that will be more suitable to him. At this stage the conflict with mother became worse and the son phoned her daily which she dreaded. There was constant fear that the son might ring to press his points which the mother finds it difficult to accept otherwise.

The second visit by Mrs. A. Devi was for her problem. She complains of low mood, frustration, sleep disturbance, apprehension, mental restlessness, lack of energy, drive and interest, sleep disturbance, nausea, poor appetite, headache, sense of distress and irritability. She also has suicidal thoughts. Besides the above complaints, she came for a very disturbing condition which was situational and brief. Whenever her son gives a call to state his demand and insist on coming back home, a foul smell emits from her body which was quite distinct and different from body odour or of sweat. After the burst of smell it subsided after few seconds. That, she emitted foul smell was corroborated by her colleagues who comment on a strange, foul smell that appears to come from nowhere. According to her husband the smell was alike to spoiled, rotten cereals/vegetables and the smell was quite intense for few seconds. According to the patient, the smell erupts when she feels acute distress, sense of helplessness, frustration and anguish over her son's refusal to attend class and whenever he calls up to pressure her. His tone of voice of threat and anger disturbs her a lot.

Her past history does not reveal having had any depressive episode or anxiety that requires psychiatric consultation though she admits her nature is of anxious disposition and quite aggressive in her pursuit of her activities and sensitive to criticism.

On mental status examination, the affect objectively was depressed and anxious and subjectively feels sad and tense. Other parameters are intact. The patient was put on anti depressants and nigh time dose of antidepressant with sedative effect and very low dose of antipsychotic (risperidone 0.5 mg). After 2 weeks of medications the patient reports significant improvement in mood, sleep and appetite. Suicidal thoughts subsided. She had one episode of emission of foul odour when her son rang up.

The medication continued for another three months with three follow ups. In the meantime the conflict of son's change in career choice was resolved by putting him in a medical college and the patient felt better too. The acute distress experienced whenever the son rings up does not arise and there was no emission of the foul smell. During the course of assessment and the treatment all routine investigations (Blood RE, GBP, ECG, URINE examination) including blood sugar, lipid profile were done. All reports were within normal limit.

DISCUSSION

Major depression and dysthymia were the two main categories of depression in the 1980's, and now a variety of new constructs have appeared such as sub-syndromal depression, mixed anxiety & depressive disorder, atypical depression, double depression and depressive personality(Angst et al,1990;Klein 1990,zinbarg et al,1994 Judd et al,1994,1997:Hellerstein and little.1996, Herpertz et al,1998). Lazarus(1966),states that stress occurs when(perceived)demands on the subject are taxing or seem to exceed his abilities to adjust. Stress phenomena appear if the appraisal by the subject has a negative outcome, and the situation is perceived to be potentially damaging and hard to cope with. In addition to psychic phenomena the stress syndrome consist of somatic component, induced by increased production of corticotrophin releasing hormone

(CRH), activation of hypothalamic-pituitary-adrenal axis(HPA axis) and changes in the central monoaminergic (MA ergic) systems and the amine system. (Herman M.Van Praag, Ron de Kloet and Jim Van OS,1929).

In depression several other psychic domain are also affected such as anxiety and aggression regulation, motoricity, information processing and hedonic functions.

Life event is defined as a rather sudden and short lasting occurrence and severe enough to provide a substantial disturbance in psychic homeostasis.
Life events are very heterogeneous in nature and may originate in different spheres of life such as health, work, home, family, finance, social network (Rahe 1995).

The cognitive events may provoke feelings of grief, despair, (auto) aggressiveness, hopelessness etc. they are usually seen in neurotic individuals and people with personality traits that make them vulnerable to frustrations in the relationship sphere. The patient's depression and distress were linked to her son's going against the parent's desire which they perceived will be a loss of face among relatives and friends.

The patient however, has been feeling frustrated for the last one year when the son started asserting his independence by socializing with friends, thereby coming back home later than usual. All along the parent's enforced rigid timekeeping.

The patient's sense of loss of control over her son's activities and career choice became very stressful and gradually developed into a full blown depression that meets the DSM 4 criteria.

The unusual presentation during the acute distress of emitting foul smell from her body is a cause of further research. Literatures pertaining to anxiety and depression have not reported of any such presentations. The fact that it is not delusional is confirmed by her spouse and colleagues when they comment on the unpleasant smell. Only during a certain state of distress in an already depressed mood, the smell is present and otherwise there are no such complaints.

The somatic component of depression is induced by increased production of corticotrophin releasing hormone, the activation of the hypothalamic pituitary-adrenal axis and changes in the central mono- aminergic systems, the autonomic and immune system. Could the changes explain the phenomena? Or are there other mechanisms to explain the emissions of foul smell?

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Case Report

FOLIE A TRIOS : A CASE REPORT FROM NORTH EAST INDIA

Uttam Majumder [1], Manabendra Makhal [1], Shantanu De [1], Nirmal Kumar Bera [1], Gautam Bandyopadhyaya [1],

ABSTRACT

Folie a trios is defined as an identical or similar mental disorder affecting three individuals, usually the close members of a family. One case reports of this condition are presented with a brief review of the literature. Early recognition of this condition is very much important in the management of the person having the disorder. The most of the patients with folie a trios require multiple treatments including separation, antipsychotics, individual and group psychotherapy, and family therapy.

Keywords: Folie a trios, induced delusional disorder, shared psychotic disorder**.**

INTRODUCTION :

Shared Psychotic disorder was first told by Jules Baillarger in 1860, and he termed it as " folie a communiqué." it was also called as psychoses of association, shared paranoid disorder, communicated insanity , contagious insanity, folie a deux, folie a trios, folie a quatra, folie a cinq, and folie a famille.[1,2]

Laseque and falret first introduced the term " folie a deux "or insanity or psychoses of two In the classic paper titled " lafolie a deux " in 1877.[3]
Folie a trios is said to be present when three members in a close relationship usually family members are affected (it is classified in DSM-5 as other specified schizophrenia Spectrum and other psychotic disorder). [4] And induced delusional disorder in ICD 10th edition [5]

Shared psychotic disorder is reported to be a rare occurrence [6,7] and shared psychotic disorder affecting three related person or whole family is even rare[1]. Exact prevalence of this type of psychosis (folie a trios) is not clearly reported. Cases from western country's as well as from Nigeria and India had been scarcely reported[8-12]. It is more common in socially isolated cohesive families.

Woman are more affected and mostly from nuclear families [13,14,15] reflecting traditional submissive role of ladies in the community. Delusion is first manifested in the dominant personality who then transfer it to the weaker personality and suggestible and less intelligent people.

We describe here a case of folie a trios involving three siblings, two sisters and one brother from a nuclear family. They are now residing in a socially isolated environment in a different religious practiced area in a rural village of West Bengal far away from home to render their function as school teacher in that area excepting the younger brother who is unemployed.
It may be only first time such a case reported from rural village of west Bengal in a north east part of India.

Case Report :

A 29 yrs old young hindu lady with her 27 yrs old sister and 25 yrs old brother accompanied by father comes to the author. Elder sister is diagnosed as having schizophrenia.

She as well as her sister are doing job as higher secondary school teacher in a rural village. Her unemployed brother resides together to help them.

1. North Bengal Medical College, Sushrut Nagar, Darjeeling, West Bengal,India.

They are far away from their home and their neighboring locality is religiously different. They could not develop any friends from the locality. So they leads their life totally isolated excepting some phone call with relatives. They usually become able to meet their relative twice or thrice for few days at a time in a year due to leave constraint in a new job. Their parents infrequently come to meet them as they had scarcity of time being a farmer. Suddenly she started to talk that there were enemies against them in the locality and she ordered her sister and brother not to go outside of house as enemies can kill them. She also told hearing voices talking to her self that they will kill her and others inspite of absence of any person talking to her.

They stopped to go to job. After several days younger sister and brother started to talk similarly but the had not hearing any voice. Their father defied any untoward events against themselves. They had no any past personal as well as family history of psychiatric illness. The younger sister and brother are shy, submissive and seclusive in nature and dependant on their elder sister.

The younger sister and brother are diagnose as shard Psychotic disorder (As per DSM 5 other specified schizophrenia Spectrum and other psychotic disorder).

All of them were prescribed tab. olenzapine 5mg OD for first 7days and then to take twice daily and tab lorazapam 2mg to be taken if necessary. Their father was advised to keep them staying separated to reduce the symptoms and told to review after 10 days but patient did not turn up again.

DISCUSSION:

This case illustrates a case of folie a trios involving three siblings from a nuclear family. Elder sister was the dominating personality and she had developed schizophrenia with prominent symptoms of persecutory delusion and auditory hallucination. The other two siblings were diagnosed to have shared psychotic disorder. They resided isolatedly in a minority prevailing locality. They more or less detached relationship with relatives and friends. They did not develop relation with neighbors as they were religiously different. Delusional belief of elder sister spreads to involve other two siblings who were dependent on their elder sister. This case reflects the folie a imposse subtypt of shared psychotic disorder among foursubtype, Imposse, simultanee, communiqué and induite described by Gralnick in 1942.

Progress of delusional belief to two other family members is explaining the attempt of the other two members to maintain cohesiveness in the presence of perceived hostile environment.[16] It is most impressive presentation of pathological relationship .[17] Predisposing factor in our case were social isolation and dependant personality trait in the other two siblings. It is generally accepted that a dyad composed of charismatic psychotic inducer and an induced person with dependent traits is necessary for the development of shared psychotic disorder. [4]

CONCLUSION:

As per literature, the disorder is rare but proper identification of the disorder can result in successful treatment outcome by separating the suffered members from each other and by judicious application antipsychotic. Noncompliance with treatment is some time a barrier to successful recovery.

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View Point

SMOKING IN PSYCHIATRIC PATIENTS : NEED FOR A CONCERTED APPROACH

Sanjay Garg

Smoking is a growing concern within the Indian Population. Recent surveys indicate more than one-third of men smoke tobacco. There are about 120 million smokers in India [1,2]. Smoking kills about 900,000 people in India every year [3]. It has been estimated that an average of 14 minutes of life is lost for each cigarette smoked.

The high prevalence of smoking amongst psychiatric patients is well documented in the literature. The prevalence of smoking among patients with mental disorders is estimated to be four times the rate in the general population [4]. Almost one-half of all cigarettes purchased are consumed by persons with mental illness[5].The prevalence of smoking among psychiatric outpatients is thought to be as high as 52% [6]. Smoking decreases therapeutic effect and worsens side effects of many psychotropic drugs.

Despite the high numbers of psychiatric patients who are reported to be smoking, literature in this area is strikingly lacking. Similarly, any focussed intervention programmes are extremely rare. In spite of the availability of efficacious cessation treatments, a culture of care has existed within psychiatric facilities that tend to minimize the focus on smoking cessation. Many pre conceived notions hamper the delivery of appropriate services and care within this population.

Physicians often perceive the demands of treating other psychiatric and medical co-morbidities as more important than providing cessation services [7]. There is perhaps a lack of training as well. There is also a fear that smoking cessation will exacerbate patients' psychiatric symptoms [8]. There exists a false belief that tobacco cessation may compromise recovery [9]. There is also an assumption that psychiatric patients are not motivated to quit. A belief also exists that quitting is too overwhelming a task to approach for psychiatric patients [10,11,12]. Indeed, all this sometimes lead to a false assurance being given to the patient to delay quitting.

However all hope is not lost. Despite barriers, many patients with mental illness are interested in quitting and are successful in doing so [13,14,15,16]. With appropriate resources, expertise and support, it appears possible to apply smoking cessation interventions that are successful within the general population to mental health patients. Simple computer delivered smoking cessation interventions within community settings have shown to be a feasible approach in reducing smoking related morbidity and mortality [17]. Hospital-initiated smoking cessation interventions that include transdermal nicotine replacement therapy can improve long-term quit rates in inpatients [18]. Drop-in stop smoking clinics seem to be feasible and acceptable and associated with positive outcomes [19]. Reinforcement of smoking cessation advice by more than one type of health professional has the potential to substantially increase quitting and readiness to quit in the population [20]. Proactive approaches by health professionals in helping governmental organisations in shaping policies encouraging smoking cessation can also play a pivotal role in helping reduce this huge impact and burden within the population which will filter on to this group as well. The tobacco control programme introduced in Taiwan in 2009 was associated with increases in quit attempt rate and annual cessation rate [21].

Mental health professionals need to include history of smoking in their routine query for illnesses and avail the opportunity provided to offer appropriate help and advice to this vulnerable population to improve both short and long term outcomes of psychiatric therapy as well as improve the quality of life of these individuals.

Consultant Psychiatrist, Fortis Hospital, Kolkata

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