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Editorial

It's time to care for caregivers

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Illness, both physical as well as mental, has a great impact, not only on the patient, but also on the family. One of the members gradually takes the role of whom we call a caregiver, having a tremendous influence in his or her life. While care can also be provided by support homes and facilities, family members are by and far the primary caregivers of persons with mental illnesses in developing countries. In fact, over 90% of patients with chronic mental illness are supported by their families in India.[1]

The multitude of roles handled by a caregiver includes taking day-to-day care, ensuring medications and compliance to treatment as well as providing financial support. Many patients with mental illnesses have prominent behavioural issues which need to be tackled by the care provider.[1]

Taking care of your loved ones leads to positive growth in an individual and realisation of one's potential and true self.[2,3] It gives the satisfaction of doing something for someone, ensuring the much needed care for that individual and at times giving a person a purpose in life . But it has some negative influences as well. The experience of caregiving and its repercussions on one's life depends not only on the individual and his or her respective coping skills and strategies but also on the symptomatology and the socio-demographic conditions of the individual.[4,5] Parents appraise their caregiving experience negatively, having difficulty coming to terms with their child's illness, facing the stigma, trying to receive effective medical and social help . They also find it hard to manage the odd and difficult behaviours of the patient and adjust to a new caregiver role. Caregivers feel grief and the loss of the previous relationship with the patient and perhaps what he or she could have done had they not fallen ill.[4]

Care giving activities tend to alter a caretakers' daily routine as per the demands of the patient and impact not only on the physical health of the carer but also lead to emotional and financial strain.[6]

In the process of taking care of the patients, at times carers themselves succumb to various problems, both physical as well as psychological. They may feel anxious, low and unable to cope with the increasing demands of the illness. This brings us to a very pertinent issue that the caregiver tends to face, called the caregiver burnout.[1] The common signs and symptoms of caregiver stress and burnout are anxiety, depression, irritability, feeling tired, difficulty sleeping, overreacting to minor problems, new or worsening health problems . Caregivers also have trouble concentrating, feel increasingly resentful, drink, smoke or eat more, neglect their responsibilities and also reduce their leisure activities.[7] The negative attitude of caregivers towards patient is also associated with patient abuse and increased risk of relapse of schizophrenia.[8,9]

Burnout is a very dangerous phenomena as once caregivers become enmeshed in this web of symptoms, they are unable to perform their role of taking care of the patients, who are left at the hands of their fate. The severity of problems faced by these individuals may vary. Once the symptoms are identified by clinicians, they can assertively intervene and provide increased psychological support, psychoeducation and practical problem-solving to reduce the burden.[4]

The use of respite care, such as adult day care, which seeks to lessen patient's dependency on caregivers and allow the former to carry on with their usual routine , at least for a while, would also be helpful.[10] Social-service agencies can provide education and training programs to caregivers to help

them understand and manage care recipients' behavioural problems. This would also help in reducing the caregivers' negative experiences.[11] Strengthening of the current mental health facilities with establishment of community-based mental health care facilities will help to increase accessibility to treatment and hence reduce the burden on caregivers.[1] Any significant psychiatric illness in caregivers must be treated clinically with appropriate medication and psychological support. Caregivers should be encouraged to engage in relaxation techniques like Yoga, meditation and simple life style interventions like exercise, walks etc.[12,13]

In conclusion, if mental health professionals identify and provide appropriate help to the caregivers at the right time, it will help in keeping the support system of the patients intact. Dealing with problems using healthy coping strategies is very important in maintaining their mental health as well as physical health and will help them to continue to provide the much needed care to their loved ones.

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Invited Editorial

World Mental Health Day Theme 2017: Mental health at workplace

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World Mental Health Day, 10th October, 2017 was celebrated globally to emphasize the fact that sound mental health would result in greater work productivity and efficiency at work place. Global Burden of Disease projects that Depression would be second leading cause of disability by the year 2020. The focus of World Health Day, 7th April this year was Depression: Lets talk pointing out that talking / expressing negative thoughts to some friend, family member, colleague or a relative, counselor can be of great help. Several events on depression as well as mental health at workplace were organized to make public aware of depression, early identification and intervention by Indian Medical Association as well as other scientific bodies throughout several parts of the country. Media coverage on the theme topic "Mental Health at workplace" helped in sensitizing the general population on this issue.

Often mental illnesses remain undetected, unrecognized and untreated. Globally, the prevalence figures often missed out due to lack of nationwide data available from different developing nations. World Health Organization 2017 reports that globally, 300 million suffer from depression, 60 million from bipolar affective disorders, 21 million from developmental disorders and 47.5 million from dementia. There are hardly any interventions available for low and middle income countries.[1] In India, it is projected that by the year 2030, 22% of the economic output between 2012-2030 would be spent on mental illness. A cost effective approach is integration of primary health care services for providing coverage to mental illnesses. Apart from this, the role of media and several mental health professionals will help in creating awareness, reducing stigma and early identification of mental illnesses. Early identification and intervention will help in improving the work output of the individuals, indirectly saving huge money which is lost due to poor efficiency when an individual is incapacitated from mental illnesses.

The workshops, seminars and lectures should be organized at a tertiary care teaching hospital. Education materials available in Hindi, English and regional languages should be distributed. The main focus should be appreciation of employees and workers, creating of a supportive environment, identification of early signs of burnout (low tolerance to frustration, irritability, lack of self confidence, work imbalance, decreased concentration, sleep impairment), creating an organizational culture which reflects value systems and beliefs, stress management (time management, setting of goals and realistic targets, relaxation , timeouts),building awareness and reducing stigma and mental health wellness and providing support for employees who need it by early identification and early intervention.

WHO developed manuals [2] available in both English and Hindi for reducing the harassment and bullying of the employee. The focus should be on creating an environment that fosters positive mental health for all. The priority should be that individuals should be able to strike appropriate work life balance as both the personal (family responsibilities) and work (professional) duties are important and neglecting any would be disastrous for the individual and society at a larger view. The individuals who are giving less output, spending long hours, frustrated, irritable, neglects responsibilities, avoids social gathering, prefers loneliness, sullen behavior, expressing negative thoughts, easily in tears,

indecisiveness, appetite/weight loss, forgetfulness, easy fatigability are some of the features that should alert the peers. The appropriate and timely consultation of mental illness should not be a taboo and should be carried out in the same manner as that for physical illness. Individuals already suffering from disabilities / mental illnesses should not be discriminated on these grounds. Rather, organization should be friendly and tries to obtain maximum output from all individuals. In case of stress or a disturbed family functioning, the staff in any organization should provide all support so that the vulnerable individuals don't succumb to mental illnesses. The support systems of the workplace especially superiors will be very encouraging for the subordinates during their hour of crisis. This will not only strengthen the relationships but will also make the younger staff more responsible and motivate them to do their tasks in an efficient manner. The employees if do not foresee any brighter future in the same organization, should think for a change rather than becoming frustrated. Healthy environment, the workplace get together, in-house facilities for Yoga, recreational facilities like sports , music, cultural events help in minimizing stress.[3]Involvement of the younger colleagues in workshops conducted for upgrading their skills is an initiative that every organization should undertake. Active listening, empathy, problem solving, time management, avoiding jargons/ inappropriate gestures, maintaining dignity and work place ethics, politeness, sharing information no unwanted advice and imparting positive energy to all the employees should be provided . Training the managerial staff will help in generating the right kind of leaders who will provide guidance to all. Media personnel should be invited to attend the workshop and publish the updates in several newspapers thereby spreading the message across the entire nation.

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Review Article

Evolution of Mental Health Services in Delhi

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Introduction

The year 1947 did not only witness the independence of India from the British yoke but it also saw the forging of the first link in the chain of events which began with the establishment of lunatic asylums during the rule of East India Company during the initial years and the British Raj later on. The last one in the link was the Hospital for Mental Diseases at Shahdara in Delhi established after the independence of the country, in the year 1966.[1]

It was on 24th August 1608 Captain William Hawkins of the East India Company dropped the anchor at the mouth of the Tapti river about 14 miles below Surat and travelled to the Mughal Court to seek formal permission to trade within its dominion.[2]

Having taken Ormuz from the Portugueses with Persian help in 1622, the East India Company proceeded to expand its presence on the peninsula coast line. A trading post at Madras (Chennai) on the land leased from the local Hindu ruler was built in 1640 and another at Bombay (Mumbai), which Charles II had received in 1600 as a part of dowry for marrying Catherine of Portugal. Bombay was made available to the company in 1668. In 1674, the headquarters of the company were shifted from Surat to Bombay. Calcutta (Kolkata) was founded in 1690.[3]

Eighteenth century was a period of political instability for India. The developments of the period contributed to the political unrest and psycho-social turmoil in the country. As we know, the emergence of lunatic asylums in India is entirely a British conception. It is interesting to note that the construction of lunatic asylums in and around Bombay, Madras and Calcutta – the three presidency towns of British India, was almost parallel to the political events which took place in each region. Need to construct these asylums was felt because many Englishmen and Indian soldiers in the service of the East India Company required custodial care when they were off their minds. The early institutions were influenced by not only the prevailing beliefs about the mentally ill in England during that period but also there was a close relationship between political developments and establishment of these institutions.[4]

The East India Company won the first decisive battle of Plassey near Calcutta in 1757 and the first lunatic asylum was built in Calcutta in 1787. Some eight years later another asylum was opened on 17th April 1795 at Monghyr in Bihar, about 400 miles north of Calcutta. The hospital was meant for British insane soldiers. Madras, another seat of British rule, where East India Company was fighting Tipu Sultan of Mysore, emerged a powerful centre for political, educational and healthcare activities.[4] At Kilpauk in Madras, the first asylum was started in 1794 for 20 patients. In 1807 it was expanded to house 54 Europeans. One of the earliest mental hospitals built in Bombay was in 1745 and another one at Colaba in 1806.[3]

Until the early part of nineteenth century, these asylums were located only in the major cities like Bombay, Calcutta and Madras and the cities directly under the control of the company catering to the needs of the Europeans. Subsequently, a chain of such asylums came up at various other places in these regions. Their cultural impact, therefore, was deeper and more enduring in the coastline regions – the southern, eastern and western regions.[2]

Since the East India Company was primarily concerned about the welfare of its own fellow Caucasians and to a lesser extent Indian soldiers whom they needed the most, the local populations were largely ignored.[4] Owing to their natural arrogance as the conquering race and their habit of segregating themselves from the natives, they remained strangers in India, lived in their own colonies which they called civil lines, had their own shopping centres and developed utility centres for their own subjects. They knew that their ultimate resting place was the distant land from which they had come.[3]

After having settled comfortably at these places which were easily connected with sea, they focused their attention towards Delhi, the seat of political power and the capital of mighty Mughal Empire. From Delhi the whole of India lies before the would-be-conqueror. Control of Delhi represented key to Indian subcontinent. From Delhi pressure could be exerted on the plentiful lands of the central and western India with their access to sea.

And it was made possible in the beginning of nineteenth century when General Gerard Lake of Company's army captured Delhi on 16th September 1803 reducing the Mughal Emperor to a mere pensioner of the company. A hollow symbol of vanished power of Mughal tradition lingered as if in suspended animation for some years. This tranquil decadence was swept away in 1857 when the mutineers once again captured Delhi for the aging emperor Bahadurshah Zafar with the blood-bath of the mutiny, its horror of massacre, siege and vengeful sack. Delhi was retaken from the rebels when the young British captain Hudson summarily shot two of emperor's sons and a grandson dead. The emperor was captured and was sent to Rangoon as a "state prisoner." The administration of Delhi was delegated to the Panjab and the capital city of the mighty empire became a district centre until the foundation stone of India's new capital – New Delhi had been laid on December15, 1911 by the King George V and the Queen Mary of England.

Because of these political developments, though a major city of India, Delhi never received the similar exposure to Western influence of educational and healthcare activities as did Bombay, Calcutta and Madras. Delhi could never have its own mental hospital during the British rule and it was much later in 1966 the Hospital for Mental Diseases at Shahdara was built. Around the period of mutiny, some hospitals in close proximity of Delhi came up which catered to the needs of Delhi population. The important ones were, at Agra built in 1858 and Bareilly in 1862.[4]

Birth of Indian Psychiatric Society

On 7th January of 1947, a group of thirteen dedicated mental health professionals met in the city of Delhi for the first time to chalk out India's future mental health activities as a professional body. TA Munro, the advisor in psychiatry to British India Army (1945-47) invited the eminent psychiatrists and other physicians interested in mental health, mostly from the army background to constitute an association for the cause of mental health in the country. It was an inaugural get-together which took place during the ongoing annual conference of Indian Science Congress held at University of Delhi. Among those who attended this historic meet were, RB Davis, JE Dhunjibhoy, SA Hasib, RM Lloyd Still, C Kenton, MH Shah, DJ Walterson, NN De, AS Johnson, RS Lal, HP Maiti, RJ Rosie and ETN Tylor. MV Goviondaswamy and KK Masani were not personally present during the meeting but they endorsed the proceedings of the meeting later. The professional body formed was named Indian Psychiatric Society.[5]

Col. Dhunjibhoy was formally elected the founding president of the society but soon after the independence, he migrated to Karach in the newly carved out Pakistan. Later, he resigned as the fellow of the society on 3rd April 1950. NN De took over as president in the first annual conference held at Patna on 2nd January 1948. Only ten delegates could attend the conference as the English psychiatrists who were the part of inaugural meeting had left India after independence.[3] Col. Kirpal Singh was the new member enrolled during the first annual conference.[6]

Forty years later, Delhi psychiatrists managed to have their own state level professional body conceived in 1987. Currently, the Delhi Psychiatric Society has around 300 members working in the field of mental health in different positions. The society publishes its own journal.[7]

Emergence of General Hospital Psychiatry

Unlike other major cities of the country, Delhi had virtually no psychiatric services before the independence of the country. Grossly disturbed and unmanageable patients requiring custodial care or indoor treatment were sent to the nearest mental hospitals – Agra, Jaipur, Bareilly or Amritsar, and the others were treated by the local physicians of various systems of medicine and the faith-healers.[5] Whereas Girindershekhar Bose at Calcutta and KK Masani at Bombay had already taken the lead in establishing general hospital clinics in their respective cities in the fourth decade of twentieth century, Delhi had to wait for many other cities to take their turn before it had its first general hospital psychiatry clinic in 1957.[8] When Dr S. Dattaray was posted as "state psychiatrist' to look after the inmates lodged in a jail located near Delhi Gate where Maulana Azad Medical College exists today, he had no idea that his arrival to Delhi could pave the path for the growth of general hospital psychiatry units (GHPU) in the city. Dattaray started the first ever GHPU at the nearby Irwin (now Loknayak) hospital once a week in collaboration with Medicine department. When Maulana Azad Medical College came into existence in 1958, the jail inmates were shifted to Tihar and Dattaray was re-designated as lecturer in psychiatry at the college where he began teaching undergraduate medical students in addition to the clinical care of jail inmates at Tihar and psychiatry clinic at Irwin hospital. GB Pant hospital (now GIPMER) came up in 1964 where a full-fledged department of psychiatry was created.[9] The department is currently running post-graduate training programme in psychiatry – first PG training centre started by Delhi University in 1983.The department has provided leadership in training general practitioners in mental health under the National Mental Health Programme.[7]

All India Institute of Medical Sciences, country's premier medical institute established its psychiatry department on arrival of Professor D. Satyanand from Central Institute of Psychiatry Ranchi in 1957. Post-graduate training programme began in 1962. Among other facilities, the department began Community Outreach Programme and Child Guidance Clinic in 1964. Its De-addiction centre was established in 1976 which later became the National Drug Dependence Treatment Centre. From 2016, the centre had started post-doctoral (DM) programme in Addiction Psychiatry. The centre moved to its current location at Ghaziabad in UP in 2003. The department has taken the leading research on epidemiology of substance abuse along with mental health morbidity.[10]

Erna M Hoch, a Swiss psychiatrist who worked at Lady Hardinge Medical College in 1966 established the department of Psychiatry there. During the same period Dr Austin worked at Safdarjang hospital to run OPD services in Psychiatry.[7] Almost all big hospitals in Delhi provide psychiatry services which include 13 government hospitals. At present there are 42 private psychiatry clinics in the city providing mental health services.[11]

Psychotherapy services

Girindershekhar Bose founded Indian Psycho-analytic Society at Calcutta in 1922, independent of Freudian influence. Later on, the society got affiliated to International Psycho-analytic Association which was propagating Freudian psycho-analysis. In the due course of time, the British School of Psycho-analysis had its influence when Owen Berkley Hill joined as the medical superintendent of European Mental Hospital at Ranchi. David Satyanand who succeeded Berkley Hill had received his personal psycho-analysis from him and later came under direct influence of Melanie Klein. When Satyanand came to AIIMS Delhi, he began his work with orthodox Freudian views. His work offers unique insight into the way the 20th century ideas influenced the developments. He did analysis of dreams using Freudian, Adlerian, and Jungian perspective, as well as by extending his own tools of understanding mysticism. He used the concepts derived from Indian mythology and Hindu philosophy, particularly the Bhagwad Gita. His total analysis is 'analysis of content and processes of all dimensions.'[12]

He has set forth his views in a series of publications which on account of stylish opacity could not become popular reading. However he retains multidimensionality and elusive, hard to categorize quality that distinguishes him from other psycho-therapists of his time.[13] Despite of his prolific productivity, his influence as a psycho-therapist is not visible in Delhi or in India for that matter. His ideas were carried further by GG Prabhu after his death.[12]

Erna M Hoch while working at Lady Hardinge Medical College delved deep into the traditions and mores of variegated Indian culture. Her psycho-therapeutic methods are prominently reflected in her book, Pir Faquir and Psycho-therapist[14] Like Dhairyam and Geoge Carstairs, she believed that the model of psycho-therapy which is widely accepted in India could be found in traditional concept of relationship between the religious leader and the follower. She wrote copiously about her psycho-therapeutic experiences with Delhi patients.

Accepting this concept, JS Neki, who took over from Satyanand as chairman of psychiatry department at AIIMS, examined this traditional relationship as a therapeutic paradigm. With the rejection of Satyanand's model by Delhi people, Neki propagated 'Guru-Chela Relationship' based on tenets of religion and cultural beliefs. The Guru (the therapist) more active of the two parties has to resume the responsibility for decision taking and the insight provided. This model received wide acceptance among patients and is practiced by many therapists.[12] At present, depending upon their training background, psychiatrists of the city practice a wide range of psychotherapy including cognitive behavior therapy.[7]

Post-graduate training programme in Psychiatry

At the time of independence Delhi had only one medical college that too only for women students – Lady Hardinge Medical College without formal psychiatry services and teaching. The first PG programme in Psychiatry began at AIIMS in 1962 followed by Delhi University at Maulana Azad Medical College in 1983 and subsequently at Lady Hardinge Medical College and Institute of Human Behaviour and Allied Sciences at Shahdara.[9] When Ram Manohar Lohia Hospital was elevated to a post-graduate medical institute, MD psychiatry course was launched in affiliation with Guru Gobind Singh Indraprasth University in 2009.[7] In 2016, post-doctoral (DM) course in Addiction Psychiatry was started at the National Drug dependence Treatment Centre AIIMS. Sir Gangaram Hospital has started post-doctoral fellowship in Child and Adolescent Psychiatry.

In addition to these courses, DNB training programme is imparted at Army Hospital, Sir Gangaram Hospital and Vidyasagar Institute of Mental Health and Neurosciences. RML PGIMER and IHBAS are providing MPhil Programme in Clinical Psychology.

State Institute of Psychiatry

Institute of Human Behaviour and Allied Sciences (IHBAS)

Delhi's only mental hospital built on outskirts of the city across Yamuna River in Shahdara in 1966 was known by the name of Hospital for Mental Diseases (HMD). Like all other mental hospitals of the country, HMD became a favoured destination for custodial care of severely disturbed patients. However, the deplorable conditions brought notoriety to the hospital. In response to a Public Interest Litigation (PIL) filed in 1983, the Hon'ble Supreme Court observed blatant violation of human rights and ordered for remodeling of the hospital as a centre for training, treatment and research in 1991. In compliance to the court directive, in 1991, the hospital was registered as a society under Society Regulation Act 1860 with the name of Institute of Human Behaviour and Allied Sciences (IHBAS), which came into existence in 1993.[15] Since then the hospital has seen tremendous progress and established itself as a benchmark neuro-psychiatry institute.

Teaching and Training

During the initial years, the institute provided DNB (Diplomate of National Board) training programme from 1999 to 2002 and subsequently it got affiliated to Delhi University to launch MD Psychiatry in 2003. The institute also provides MPhil in Clinical Psychology since 2004 in addition to training programmes in Psychiatric Social Work and Psychiatric Nursing.[16,17] It caters to the heaviest psychiatry OPD in Delhi – 1200 to 1300 patients are attended to everyday. Hospital has extensive indoor facilitie which include emergency services (ICU).[18]

Community Mental Health

IHBAS is the resource centre for implementation of District Mental Health Programme (DMHP) in North India since 1999 and currently operates at five districts of Delhi ie Timarpur, (North), Jahangirpuri (North-West), Chhattarpur (South), Dwarka (South-West) and Motibagh (West). The

DMHP team also visits two residential homes for homeless once a month delivering metaoutreach services (reaching beyond outreach clinics).

Mobile Court facility

IHBAS in alliance with NGO Ashray Adhikar Abhyan (AAA) launched community outreach service model for providing health intervention for the homeless persons in least restrictive setting. This programme is running since 2000 under the DMHP. In 2008, to address the issue of providing involuntary treatment in the community for the persons with serious mental illness not in a state to give consent for the treatment, a new initiative was started as a pilot project with the aid of Delhi State Legal Services Authority (DSLSA). Under this service, mobile court facility is made available at the clinic for legal facilitation of involuntary treatment of patients with severe mental illness in need of treatment.[16,18]

Mobile Mental Health Unit (MMHU)

Homeless mentally ill, wandering on streets or homebound untreated patients is a common but deplorable, a sheer violation of right to health. To address this problem, project Mobile Mental Health Unit (MMHU) was launched by IHBAS and Delhi State Health Mission (DSHM) under National Rural Health Mission (NRHM). It has a mobile van and a multidisciplinary team which plays an important role in actively identifying homeless persons with mental illness in the community and helping them engage in treatment with legal and social welfare agencies.

Mother-child unit

Women with severe mental illness requiring hospitalization during crucial peripartum period often pose a clinical challenge. Many a times they are referred to obstetric facilities and it also often leads to separation of mother and child on the name of best interest of maternal recovery. To address this unique problem and providing mental health care to such women in a facilitatory environment where comprehensive care package for mother and child's medical as well psychiatric needs can be provided. IHBAS has a five bedded mother-child unit since 2010 where multidisciplinary team provides special care to court referred cases or patients with family members. Mother and child are provided trained hospital attendants to ensure safety and security and aid mother to look after the child.[18]

Quality Assurance in Mental Health

IHBAS is the first government run specialized neuro-psychiatry centre to receive National Accreditation Board for Hospitals and Health Care providers (NABH) accreditation.[19] IHBAS has fulfilled an important mandate given by the Supreme Court of achieving balanced combination of teaching training, treatment and research.[18,20]

Private psychiatry has emerged in a big way in Delhi during the last two decades and has shown a phenomenal growth in terms of man-power and infra-structure development. There is Delhi chapter of national professional body of private psychiatrists working for promotion of positive mental health in the city. Vidyasagar Institute of Mental Health and Neuro-sciences (VIMHANS) is an exclusive neuro-psychiatry centre devoted to the cause of mental health. Delhi has provided leadership in creating awareness among masses about mental illnesses which has gone a long way in diluting the stigma attached to mental illnesses. Leaders like Avdesh Sharma have done pioneering work in this area. Emergency interventions such as 'suicide prevention help-line' are actively at work in the city of Delhi.

Though Delhi has been a late entrant in the arena of mental health services, it has sufficiently made up to keep in step with rest of the country.

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Review Article

Quality of life among elderly living in old age homes: A brief overview

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Introduction

Ageing is an important part of human life and is marked by weakness and emotional sensitivity. As people age, they seek more attention from family members which is hard to get due to their busy lifestyle. This makes them insecure and vulnerable to a number of emotional disturbances. It is a period when people 'move away' from previous more desirable periods or times of 'usefulness'. Old age is considered as a curse, associated with deterioration of all physical, psychological factors, as well as isolation from social, economic and other activities. Old age is often viewed as a problematic period of one's life where one indulges in introspection and starts taking meaning of his life. Their weak physique makes them increasingly dependent on others and fearful anticipatory speculation of life process makes them anxious, combined, low income and consequent declining position in the family and society leaves them in deep despair.

Changing family value system, economic compulsions of the children, neglect and abuse has caused elders to fall through the net of family care. Homes for the Aged are ideal for elderly people who are alone, face health problems, depression and loneliness[1].

Modern life style has created barriers and time has become very precious in this rat race leaving elderly people unattended. It is said "A home is heaven where elderly and younger ones are been cared". This has promoted the concept of old age homes where their loved ones manage to find a middle path.

Old age Home

Old age homes are meant for senior citizens who are unable to stay with their families or are destitute. For older people who have nowhere to go and no one to support them, old age homes provide a safe haven. These homes also create a family like atmosphere among the residents. Senior citizens experience a sense of security and friendship when they share their joys and sorrows with each other[2]. States in India such as Delhi, Kerala, Maharashtra and West Bengal have developed good quality old age homes. These old age homes have special medical facilities for senior citizens such as mobile health care systems, ambulances, nurses and provision of well-balanced meals.

As per a survey conducted by the Madras Institute of Ageing, there were 529 old age homes in India in 1995[3]. While Help Age India has reported 700 old age homes in 1998.[4] In addition it has been reported that the southern part of India account for 52% of all old age homes.[5] Residents of old age homes in another survey were found to be generally from lower socio-economic classes with the exception of homes that charged fees for their services.[6]

There are more than a thousand old age homes in India. Most of them offer free accommodation. Some homes work on a payment basis depending on the type and quality of services offered. Apart from food, shelter and medical amenities, old age homes also provide yoga classes to senior citizens. Old age homes also provide access to telephones and other forms of communication so that residents may keep in touch with their loved ones. Some old

age homes have day care centers. These centers only take care of senior citizens during the day.

The home environments are primarily for those elderly persons who are unable to stay with family members due to any reasons. It is an alternative shelter where elderly persons can share their feeling, liking, experiences with each other staying at this type of settlement. They live in an institutional set-up following some rule and regulations.

Development of institutional care for the aged person in India has a long history. The first old-age home in India was started in early 18th century but information is not available before1702. There are two types of old age homes in India. One is the "Free" type which cares for the destitute old people who have no one else to care for them.[7] They are given shelter, food, clothing and medical care. The second type is the "Paid" home where care is provided for a fee. Now a day, such "Retirement" homes have become very popular in India and they are well worth considering. Many factors have contributed to the alienation of the elders from home to old age, including Migration of young couples from the rural areas to cities in search of better employment opportunities. Elders who have been in control of the household for a long time are unwilling to give up responsibility to their children, Youngsters on their part are sometimes resentful of the attitude of their parents, Many youngsters have moved to places far away from their native homes and in the recent past to many countries abroad. So even if they want to take responsibilities of their old parents they cannot accommodate their parents in their own homes. Elders are sometimes too incapacitated to look after themselves or get medical care especially in an emergency.

All these have made the old age homes seem more relevant in the Indian context than ever before. Today the services are mainly provided by the Non-Governmental, voluntary and without profit particularly the religious charitable organizations in helping the needy seniors.

Quality of Life of Elderly

Quality of life is defined as the combination of an individual's functional health, feeling of competence, independence, activities of daily living and satisfaction of social circumstances.

Quality of life is widely recognised as an important concept and measure of outcome in health care, and the concept is emerging more and more often also in connection with long term care . However, although improving or maximising the Quality of life of the clients seems to be increasingly mentioned in care policies and development programmes of long term care of older people, it less often is a goal pursued in actual care practices. In our view, among the reasons for this are underdeveloped concepts, structures and processes of evaluation of care outcomes in the long term care of older people. Although considerable progress has been achieved in research and practice in recent years, there still are no common definitions or standards for quality available in long term care and no "golden rules" on how to care for the frail and vulnerable clients well and based on best gerontological knowledge. The quality of documentation in long term care tends to be poor and narrowly focused on clinical information, and standards for documentation are lacking, let alone the development of information technologies tailored for this purpose. Although examples of "good practice" are becoming available from all over Europe and can guide the improvement of practices, systematic quality management in long term care is underdeveloped. In addition, even if quality evaluation and care documentation are in place, the voices of older clients themselves as well as those of their informal carers tend to be neglected as they are not regularly involved in setting goals and evaluating results of care. Client orientation in care management and performance evaluation needs to be strengthened, since it is not possible to evaluate the effectiveness or efficiency of care if the experiences and evaluations of persons whose needs are to be met and whose life qualities are to be improved are not heard.

In order to improve the quality of life of older people and support prosperity in an ageing society, it is necessary to provide all people over their life course with opportunities for self-fulfilment, learning, education and active life. Linear model of education, work and pension becomes increasingly outdated and boundaries between individual stages of the life cycle become more flexible and less distinct. Older persons have as all other people, the right to be assessed as individuals, on the basis of their abilities and needs, regardless of their age, sex, colour of

skin, disability or other characteristics. Older persons and their knowledge and experience should be placed in the centre of changes imple-mented in response to population ageing.

Wellness is generally used to mean a healthy balance of mind, body and spirit and it results in an overall feeling of well-being. In other words; wellness is a view of health that emphasizes the state of the entire being and its ongoing development. There are several determinants of wellness and some of them include better understanding of concepts like health practices, spirituality, family, environment, work, money and security, health services, social support and leisure. Behaviours of others that convey criticism or imply that a person is unworthy of love or friendship are more likely to be related to depression that is the mere basis of support.

Older people who must take multiple medication, who are experiencing chronic pain, or have limitations in activities of daily living and their interpersonal relations are more likely to report lower quality of life. This is especially true for older women[8].

Quality of life in old age is to a large extent determined by conditions, events and decisions during childhood and adulthood including environmental and lifestyle factors. The life-course approach to health means paying attention to specific risks related to individual life stages and transitions and to different needs of various age groups. Although the life-course approach puts emphasis on prevention, it is also necessary to adopt targeted measures aimed at elimination and compensation of existing problems and risks. Quality of life can be influenced and improved at any age. The life-course approach needs to be applied not only to health, but also to education, employability, housing, material welfare or social participation.

Quality of Life and Aging

It has been emphasized that Quality of Life (QoL) is an extremely complex, abstract, and scattered concept difficult to define and has a high impact on research and practice[9,'10] . QoL is a key concept in environmental, social, medical and psychological sciences, as well as in public policy and in the minds of the population at large; nevertheless, there is no consensus regarding the definition of QoL.[11]

Moreover, when QoL is referring to old age it must be required to address the broad diversity of ways of aging; that is, from successful aging through usual aging to aging with disability (and dependency). Consequently, from the very beginning we have to take into consideration that QoL in old age cannot be reduced to QoL in clinical or health settings but must have a general (normal) vision.

Quality of Life and Old Age Home

Providing care for the aged has never been a problem in India where a value based joint family system was dominant. This family structure has been the socio-economic backbone of the average Indian. During ill health or emergency or any critical position, family members were taking the responsibilities and sharing the burden to help each other. The families also were sharing the responsibility to look after their elderly by giving them all kind of support including emotional, psychological, behavioural or economic. They were getting full respect and value. Their advices were also being received by younger generation and were revered and honoured. They were living in the family till the end of their life. With the increasing influence of modernization and new life styles resulting in transitional changes in value system in recent times, the joint family is breaking down into several scattered nuclear families[12]. Change in family structure and contemporary changes in the psycho social matrix and values often compel the elderly to live alone or to shift from their own homes to some institutions or old age homes.[13-17] OAHs are coming in existence as a newer occupancy for elderly and becoming the need of present Indian society.

A study has been carried out to explain the relationship between Quality of life and attitudes to ageing.Finding of the study indicate that there was significant relationship between QOL and attitudes to ageing of older adults. In this study, the highest significant relationship is between psychological growth subscale of attitudes to ageing and sensory abilities subscale of QOL[18]. Another study comparing the quality of life of men and women living in insti-tutions and non-institutional settings in urban Bangalore District was done. The results revealed that elderly living in institutional setting showed high level of Quality of Life than non-

institutional setting and there is a significant difference between the institutional and non-institutional elderly men and women in the area of physical, psychological, level of independence, social relationship and environment domains of Quality of Life[19]. A descriptive cross sectional study was carried in old age homes. The result also showed majority (80%) of inmates were literate. The most prevalent morbidities were hypertension and diabetes with distribution of 47.8% and 43.5% among males, and 43.3% and 34.3% among females respectively. The respondents showed highest quality of life score (60.47±10.14) in environmental domain and least score (34.66±14.88) in social relationship domain which reflected the good environmental condition at old age homes but there is a need to address the issue of social negligence of elderly from family and society[20]. Lucknow old age homes based study findings show that more than half of the inhabitants of old age homes were suffering from one or the other mental health problems, depression being the most common one. The inhabitants suffering from psychiatric illnesses had one or more associated physical morbidity[21].

A comparative study was conducted to assess the health-related QoL (HRQoL) of elderly people living in two settings: (i) rural community and (ii) homes for the elderly in a district of South India. Residents living in a home for the elderly scored better in all domains except for role-physical and role-emotional. The elderly report that their lives are better when they are staying in homes for the elderly. Hence, despite the socio-economic conditions, provision of a better and conducive environment by setting up more charity-based homes for the elderly may be one of the options for relative betterment of the Quality of Life of the elderly, particularly those who are socially and economically deprived[22].

A research was carried out to assess the facilities available and the factors associated with elderly people for availing the residential services of old age homes. The most important reason for elderly people living in public OAHs was no care taking person at home (77.1%) while in private OAHs it was 36.4%. Services like medical services, recreational facilities, safety, space availability and staff availability were significantly better OAHs. Quality of life in private OAHs was significantly better than in public OAHs[23].

Ranchi old age home based study findings indicated that QOL was better of those elderly people who were living in old age home in comparison to those elderly people who were living within family setup[24]**.** A Study carried out by Panday et al to assess and compare Ways of Coping between elderly people living in old age home and within the family setup. Findings of this study indicate that Ways of Coping were better of those elderly people who were living in old age home in comparison of those elderly people who were living within family setup[25]. Jamwal conducted a study comparing quality of life, loneliness and psychological distress of the elderly males and females living in institutions and non-institutional settings in urban Jammu district. The results revealed significant differences on loneliness and quality of life between those living in institutional settings and those living with their families[26]. Panday conducted study on gender difference on quality of life among elderly living in family and found out that male elderly have better quality of life in comparison to female elderly[27].

Quality of life elderly in people (QOL) is becoming even more relevant with demographic shift happening towards an ageing society. There are indications that concerns related to QOL in elderly people are different from that of general population. In India, there is low awareness about special needs of elderly and care takers are yet to understand the basics of elderly care (physical, mental health, psychological, & social support). Furthermore, among elderly there is variation between those living in old age homes and those living in general population.[3]

For minimizing the gap between old age homes, the family and community, there is a need to raise awareness about ageing in the community and amongst health professionals and to improve the access to appropriate healthcare for the elderly. Health education should aim to educate health workers and the community, to recognize the common symptoms of mental disorders and, in particular, to stress that depression and dementia are real disorders and not just the natural consequences of ageing. The promotion of gerontology/geriatric medicine within Indian medical schools is an important agenda. Mental health professional who work with older people must be

especially aware of their own attitude toward the aging process and toward older people Mental health professional must have an optimistic view of the last stage of life and genuine belief that older people have a right place in society and a reservoir of wisdom from their accumulated years of experience will enable them to change[27].

Conclusion

One can age with grace and enjoy the old age with optimum health if a basic step is taken in its onset to improve the way of life of person. The concept of "old is gold" is true when elderly with good health share their experience and knowledge. They are subjected to good health and much joy and satisfaction in their achievement and achievements of those they love. Although the process of ageing, disorders and disabilities of elderly cannot be totally prevented but suitable measures can be taken that would retard this progress thereby leading to a longer period of health and thus preserving their quality of life. Living arrangement, financial position and well being would undergo change in old age. Traditional role of respecting and caring for elders should be reinforced at school level and interventions from the primary level. The experiences and expertise of the elderly should be utilized for the society. Elderly should be given legal security against abuse and harassment. Policy makers should evaluate successful programmes for the elderly of other countries and adopt them to suit local conditions and economic viability. Separate processing schemes for the elderly should be organized to meet their needs of reduced mobility and safety precautions.

Controlling and modifying environmental factors to improve the feeling of self – efficiency will help in improvement of environmental health of elderly in old age home. Social and physical recreational activities will help in building self image, satisfaction level and improving quality of life of elderly in old age homes.

Educating about aging the others family members particularly the young on their role in keeping the elders happy and active and to support them physically, socially and environmentally is equally important. The scope for intervention by mental health professionals are in planning and delivering adequate therapeutic services in the clinical context. Based on the present study findings, Psycho-social intervention programmes be developed to enhance Quality of Life of elderly persons. Present study findings would help in implementing the rehabilitation programme for elderly people.

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Original Article

A study of cardiovascular risk factors and ten year cardiac risk estimates among schizophrenia patients

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ABSTRACT

Background: *Cardiovascular disease (CVD) is the leading cause of mortality in patients with schizophrenia and such patients have higher rates of smoking, diabetes, and metabolic syndrome, which all contribute to the elevated risk.* ***Aim:*** *To assess the prevalence of cardiovascular risk (CVR) in medicated patients with schizophrenia, we calculated the 10 year risk of having a cardiovascular event using Framingham risk equation score which is validated for South Asians.* ***Methodology:*** *A cross sectional study, carried out in outpatient clinic of Department of Psychiatry, Sawai Man Singh Medical College, Jaipur on fifty medicated patients of schizophrenia currently in remission. Patients suffering from diseases having independent CVD risk were excluded from study. Blood samples were collected for blood sugar, triglycerides, HDL cholesterol and total cholesterol after overnight fasting of eight hours.* ***Results:*** *On the basis of the Framingham risk score, CVD risk is estimated in terms of percentage, higher percentage (>20%) score indicates higher risk and <20% as low risk. Our study showed that mean duration of illness was 12.12 (± 6.73) years and risperidone was most commonly prescribed antipsychotic followed by olanzapine. Mean Framingham risk score for the study group was 10.3 (± 9.05) and six (12%) patients were found to have high CVD risk (≥20%). Among various CVD risk factors, age (p=0.001), smoking (p=0.001), high total cholesterol (0.006), hypertension (0.007) and diabetes (0.001) were statistically significant CVD risk factors and smoking was significantly higher in male compared to females. Duration of illness also had positive correlation with Framingham risk score.* ***Conclusion:*** *Use of second generation antipsychotics, sedentary lifestyle and smoking in schizophrenia subjects may influence the CVD risk and appropriate intervention may prove beneficial.*

Keywords*: Schizophrenia, Cardiovascular risk, Framingham score.*

Introduction

It has been reported that mortality is significantly higher among people with mental disorders as compared to general population with 17.5 percent of deaths attributed to unnatural causes. Also 10 median years of potential life lost is attributed to mental illnesses.[1] Several studies in the past have also suggested the same with mentally ill patients dying 20 years earlier than their healthier counterparts[2,3] and cardiovascular disease being the leading cause of mortality in patients with schizophrenia.[4,5] Smoking related fatal disease and suicide was more prominent in schizophrenia than in the general population.[6] Other causes of death include poor health status, socioeconomic deprivation, adverse health behaviors and poor quality of medical care.[7]

Apart from mortality, patients with schizophrenia have higher rates of smoking, obesity,

diabetes, and metabolic syndrome, which all contribute to the elevated risk of Cardiovascular Diseases (CVD)[8] and atypical antipsychotics play a crucial role in elevating the risk.[9] These are modifiable risk factors, which if identified and managed timely can contribute to a reduction in cardiovascular mortality. Although several studies have evaluated the prevalence of Metabolic Syndrome (MS) in patients with schizophrenia in India,[10,11] a preventive strategy is to assess the prevalence of cardiovascular risk (CVR) factors in patients with schizophrenia and then calculate the 10 year risk of having a cardiovascular event using various parameters such as Framingham risk equation score.[12,13]

The risk prediction based on Framingham risk prediction scores have been well validated in different racial and ethnic groups[14] and South Asian population including Indians have shown reasonably good similarities between risk prediction and outcome over controlled studies.[15] Other models for CVR prediction have been devised including Finrisk score which are well validated for european ethnic group but not in south asians. Our extensive literature review shows one Indian study predicting 10 years CVD risk in a schizophrenia cohort using SCORE model which predicts comparatively low risk SCORE owing to non-inclusion of HDL and diabetes as risk factors.[16] Further, the literature supports that lifestyle intervention programmes which include exercise, smoking cessation and compliance with medication are likely to have significant impact on mortality in schizophrenia.[17] With these modifiable risk factors in the background and the application of well validated Framingham model of CVD risk prediction in Indian population, we intend to identify social and clinical risk factors responsible for elevated risk among people suffering from schizophrenia.

Material & methods

A cross sectional study, carried out in outpatient clinic of Department of Psychiatry, Sawai Man Singh Medical College, Jaipur.Informed consent was sought from all subjects participating in the study. On account of the severity of illness, primary caregivers provided the consent.A total of fifty cases of schizophrenia, diagnosed according to ICD 10 Classification of Mental and Behavior disorders[18] in the past, currently having a score of 70 or less on Positive and Negative Syndrome Scale (PANSS) and currently receiving medications were taken as cases[19]. Subjects having a prior history of cardio-vascular disease including Myocardial Infarction, Stroke and any complication of diabetes mellitus were excluded from the study.Patients with other comorbid psychiatric condition including schizoaffective disorder, Obsessive Compulsive Disorder, Intellectual Disability, Substance use disorder (except nicotine) were excluded from the study. Socio-demographic and clinical details of all subjects were recorded in structured formats and a comprehensive medical and psychiatric evaluation was performed while medications were continued. The medical assessment included a systematic review of the patient's medical history, previous medical records, and a thorough physical examination including vital signs and followed by screening laboratory. Anthropometric measurements were not a part of Framingham risk score and thus excluded in assessment. Patients were asked about cigarette smoking and were considered to be smokers if they reported *smoking five or more* cigarettes *daily over the previous* week. A diagnosis of hypertension or diabetes was sought and subjects were asked to list all current medications. Patients were also instructed for eight hours of overnight fasting prior to venepuncture the following morning for assay of serum glucose, total cholesterol and HDL cholesterol. Patients were categorized as having diabetes if their fasting blood sugar was 126mg/dl or greater, or if they were currently prescribed oral hypoglycaemic agents or insulin. By using standard mercury manometer at least two readings at 5 min intervals, were taken to measure the blood pressure (BP) in the supine position. If BP was found to be high (≥140/90) then a third reading after 30 min was obtained; the lowest of these readings was recorded.

Ten years' cardiovascular disease risk (CVD) calculation[20-22] Framingham risk score provides an estimate of the chances that a person will develop cardiovascular disease over a specified period, usually 10-year. The score is estimated on the basis of age, gender, total cholesterol, HDL cholesterol, systolic arterial pressure, hypertension, diabetes mellitus and smoking habit. On the basis of the Framingham risk score, CVD risk is estimated in terms of indicating with higher percentage (>20%) score indicating higher risk and <20% low risk.

Obesity is not included because its influence is largely attributable to its promotion of insulin resistance and its attendant CVD risk factors.

The detailed calculation formula of risk points and corresponding percentage of 10-year CVD risk can be found at website (http://www.framingham heartstudy.org/risk/coronary.html).

Statistical analysis

The SPSS version 22.0 for Windows was used for analysis. Frequencies with percentages were calculated for nominal and ordinal variables and, mean and standard deviation were calculated for continuous variables. Chi-Square test, t-test and Independent- sample Kruskal-Wallis test were used for comparisons.

Result

During the study period of 1 year from January 2016 to February 2017, patients attending the outpatient clinic of Department of Psychiatry at Sawai Man Singh Medical College and Hospital were assessed as per the designed proforma and fifty consecutive patients formed the study cohort.

Table 1 shows social and demographic characteristic of experimental group. The mean age of patients was 39.48 (± 6.71) years. Out of fifty patients, majority were male (58 percent). Patients from rural and urban locality were approximately same. Nearly three fourth (64 percent) were married and about half of them were working.

Table-1: Sociodemographic variables of study sample

Variable	Mean (SD) / Frequency (%)
Age (years)	39.48 (±6.71)
Gender	
Male	29 (58)
Female	21 (42)
Domicile	
Rural	26 (52)
Urban	24 (48)
Education	
Illiterate	14 (28)
Primary	8 (16)
Secondary	12 (24)
Graduate	16 (32)
Marital status	
Married	37 (64)
Unmarried	13 (26)

Table 2 shows clinical profile of the study group where in the mean duration of illness was 12.12 (± 6.73) years. Twenty-one (42%) patients had history of psychiatric illness in family and 12 patients (24%) had history of medical illness in family. Risperidone was most commonly prescribed antipsychotic followed by Olanzapine. Few patients (24%) were receiving benzodiazepine along with antipsychotics.

Table-2: Clinical profile of the patients

Variables	Mean (SD) Frequency (%)
Total duration of illness TDI (Years)	12.12 (6.73)
Antipsychotic	
Olanzapine	14 (28)
Risperidone	18 (36)
Clozapine	6 (12)
Others	12 (24)
Family H/O psychiatric illness	
Present	21 (42)
Absent	29 (58)
Family H/O Medical illness	
Present	12 (24)
Absent	38 (64)

Prevalence of various CVD risk factors are shown in table 3. The most commonly observed CVD risk factor was low HDL level, followed by total cholesterol, smoking, hypertension, diabetes mellitus and high systolic blood pressure. Among various CVD risk factors age ($p = 0.001$), smoking ($p = 0.001$), high total cholesterol (0.006), hypertension (0.007) and DM (0.001) were statistically significant CVD risk factors and smoking was significantly higher in male compared to females. Framingham risk score mean for the study group was 10.3 (±9.05) and six (12%) patients were found to have very high / high CVD risk (≥20%) while other forty four had low risk (<20%).

This study found that all the subjects of high CVD risk (>20%) had a total duration of illness of more than 10 years and no subject with TDI less than 10 years had elevated risk i.e. >20% (Table 4). Independent-Samples Kruskal-Wallis Test shows linear positive correlation of TDI with CVD risk thus predicting increase of CVD risk with increase in TDI (Figure 1).

Discussion

This cross sectional study provides an opportunity to study overall cardiovascular disease risk

Table-3: Cardiovascular Disease risk (CVD) factors of the study group

Variable	Present (%)	Absent (%)	X^2	Df	p value
Age (≥ 40 male, ≥ 45 female	24(48)	26 (52)	4.4	12	.001 *
Smoker	30 (60)	20 (40)	.521	1	.001*
Diabetes mellitus (DM)	9 (18)	41 (82)	10.50	1	.001*
Hypertension	16 (32)	34 (64)	7.17	1	.007*
Total cholesterol(>200mg)	36 (62)	14 (28)	3.97	1	.006*
HDL cholesterol(<45 male, <50 female)	44 (88)	6 (12)	.02	1	.069
SBP ≥ 140 or ≥ 130 prior CVD, renal disease, DM	3 (6)	47 (94)	16.5	2	.582

*p < 0.05

Table-4: Total Duration of illness (TDI) and CVD score.

Total duration of illness (TDI) years	CVD score < 20%	CVD score > 20%	Chi square	df	P value
< 5 years	6	0	4.54	2	0.10
5-10 years	14	0			
> 10 years	24	6			

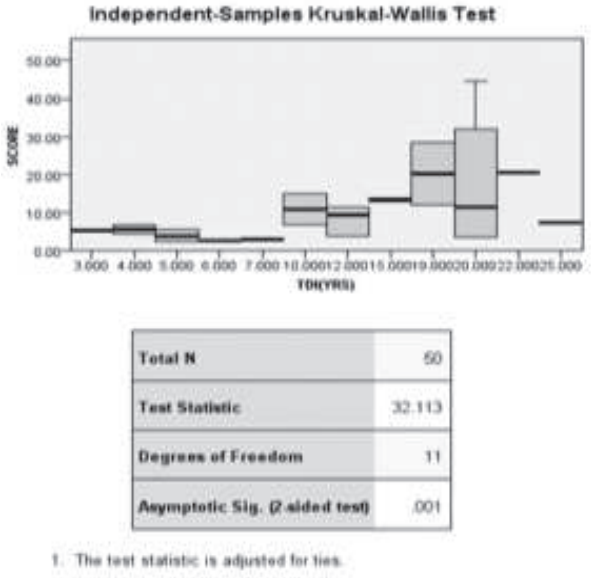

Figure-1. Independent-Sample Kruskal-Wallis Test

factors for patients suffering with schizophrenia.Mean TDI of study sample was 12.12 years (range 3-25 years) which implies that they had been taking antipsychotics for long duration. Current literature suggests that metabolic abnormalities were inherent to Schizophrenia, present in first-episode patients, and increases with the duration of illness.[20-23] In our study, there was a significant positive correlation of the TDI and the Framingham risk score (p = 0.001) i.e. the CVD risk increases with increasing age (Figure 1). It represents an important risk for adverse cardiovascular events. However, owing to lifestyle factors, it is difficult to interpret whether duration of untreated psychosis or the total duration of illness is responsible for increase in CVD risk.

Our study showed that the Framingham risk

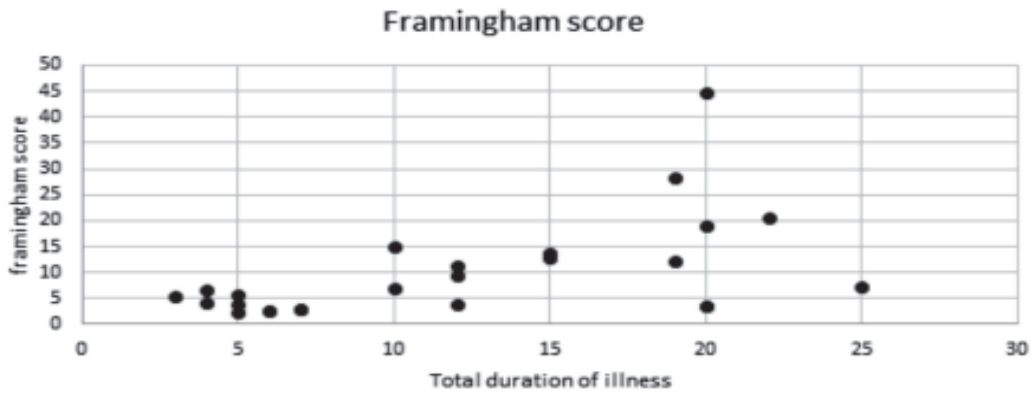

Figure-2. Total duration of illness and the Framingham risk score.

score was higher in males (11.5%) than in females (8.1%) with a mean of 10.3% which is similar to that observed in the CATIE study i.e. 9.4% for males and 6.3% and females. In the CLAMORS study the high/very high risk of cardiovascular mortality of schizophrenic population below 41 years using the SCORE function was found to be 8% (male > females). Table 4 shows the most common CVD risk factor were low HDL level (44), followed by high total cholesterol (36), smoking (30), hypertension (16), high systolic blood pressure (16) and diabetes mellitus (9). Our study found similar CVD risk (Framingham score) for patients with schizophrenia as reported by Bobes et al[21] and Daumit et al.[22] Possible reason of this finding could be age group (30-60 years) since age is an important variable which influence the Framingham risk score.

Regarding the use of antipsychotics, majority of the patients were receiving second generation antipsychotics (76%) and remaining were on FGAs. Among SGAs, risperidone (36%) was most commonly prescribed followed by olanzapine (28%) and clozapine (12%). The Framingham score was highest in the group taking olanzapine (11.2) followed by clozapine (10.5), risperidone (9.4) and typical antipsychotics (6.9), which further strengthens the fact that some SGAs have very high propensity to cause metabolic derangements and subsequently increased risk of CVD which are often not reported or may go unnoticed.[24] Surprisingly, previous cross-sectional studies found no significant difference in cardiovascular risk between patients treated with first generation and second generation antipsychotics.[25,26] One important risk factor, cigarette smoking, which was more among the males has been linked to schizophrenia and such patients smoke more heavily than other smokers,[27] and may require higher doses of antipsychotics which further elevates the cardiovascular risk. Further, one study quotes that tobacco cessation over 52 weeks reduces 10-year cardiovascular risk in patients with serious mental illness despite significant post cessation weight gain, even which may prove to be significant intervention.[28]

Our study found the prevalence of diabetes among medicated schizophrenics to be 18 percent which is twice the prevalence of diabetes in India.[29] A recent meta-analysis concluded that there is double the risk of developing Type 2 Diabetes in schizophrenia as compared to general population which is in accordance with our study.[30] Similarly, hypertension was present in sixteen out of fifty patients (32 percent) and total cholesterol levels were also elevated in 62 percent of the patients. Data from the CATIE trial sample shows that metabolic disorders are untreated in patients with schizophrenia, with particularly high rates of non-treatment for diabetes (30.2 percent), hypertension (62.4 percent) and dyslipidemia (88 percent).[31]

Other risk factors not included in the Framingham risk score must be taken into account which include centripetal obesity, abnormal ECG, insulin resistance, elevated serum homocysteine, C-reactive protein and triglycerides, and a strong family history of premature death.[32] There is increasing scientific literature that even after statistical control for the effects of standard risk factors, psychosocial factors like social isolation, hostility, lower socio economic status and sedentary lifestyle may contribute independently to the risk of CHD.[33] Importantly, the consensus development conference on antipsychotic drugs and diabetes and obesity, 2004 summarized that the etiopathogenesis of the elevated risk for metabolic abnormalities is uncertain, but their prevalence is correlated to an increase in body weight which is often seen in patients taking an SGA and baseline screening along with follow-up monitoring is essential for early diagnosis and management of risk factors.[34]

The present study has several limitations. Firstly, we assessed the patient population attending the adult outpatient clinic thereby excluding children, adolescents and geriatric population. Chronic institutionalized patients were also excluded from this study owing to sedentary lifestyle and other risk factors that may create bias in our results. Secondly, this study did not include a control group from which we could compare our results and thus the risk factors other than those included in Framingham score could not be assessed i.e. effect of life style factors, physical activity and dietary factors. Thirdly, on extensive review of literature we could not find any study estimating the CVD risk using the Framingham score from which we could compare the results of our study in Indian population. Lastly, the sample size used in this study was small as

compared to other studies focusing on CVD risk, however the cost of CVD risk assessment should also be considered.

Conclusion

Cardiovascular risk is associated with increased mortality in schizophrenia subjects. Age, gender, smoking, diabetes, hypertension, dyslipidemia and the total duration of illness itself are associated with increased risk of adverse cardiovascular events in schizophrenia. Second generation antipsychotics, sedentary lifestyle, diet and obesity may influence the CVD risk and appropriate intervention may prove beneficial.

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Original Article

The Clinical profile of children with Neurodevelopmental disorders – A public hospital experience

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ABSTRACT

Background: *Developmental and behavioral problems affect the children right before they enter the school. These problems cause severe impairment in their functioning if they are not identified at the earliest. So we took up this study to identify the clinical profile of children attending the Pediatric Neurodevelopmental Centre in a tertiary care public hospital.* ***Methods:*** *A longitudinal study of 400 children aged 2-15 yrs referred to the Pediatric Neurodevelopmental centre in a tertiary care teaching public hospital was conducted. After Institutional Ethics Committee approval and with prior consent, the children referred for academic and developmental concerns were assessed through a clinical interview with the child and the parents. Thorough neurological examination was done to look for the presence of any soft neurological signs. The mean within the groups were compared within the t-test and the proportion across categories were compared using Chi square test and Fischer exact test was applied for low cell count.* ***Results:*** *Out of 400 children enrolled, 58.08% had Specific learning disability (SLD), 41.75% had Attention deficit hyperactivity disorder (ADHD), 5% were Autistic Spectrum Disorders (ASD), 3.25% had Nocturnal Enuresis (NE) and 1.75% had Conduct disorder (CD). Developmental disorders like ADHD, ASD, and SLD were seen more in school going children i.e. 5 -15 years of age group. All of these showed male predominance. Higher prevalence was reported in upper and upper middle socio-economic status (SES). ADHD children on Methylphenidate and Atomoxetine reported improvement in academic and social skills and showed good compliance in 3 month follow up.* ***Conclusion:*** *Better understanding of the demographic and clinical profile of these children will help in early therapeutic intervention.*

Key words: *Developmental disorders, Behavioral disorders, Attention deficit hyperactivity disorder, Autistic spectrum disorder, Specific learning disability.*

Introduction

Developmental and behavioral problems in children are proposed to occur due to complex interplay of factors like the child's temperament, his/her cognitive abilities and/or family related factors and/or the opportunities and quality of child's schooling. Environment at home, neighborhood and at school has a profound influence on a child's potentials.[1] Both child's biological endowment and experiences are important in the complex processes of child development and behavior. Nature and nurture are intimately, intricately and inseparably intermingled and they determine development, behavior and emotional wellbeing of the child.[2]

These disorders include a wide range of

conditions that are mostly reported by parents and school teachers in the developmental period. These problems are related to delayed milestones, inappropriate feelings, unsatisfactory interpersonal relationships, school learning problems, physical symptoms or fears related to problems at school. The focus on developmental-behavioral issues reflects changing priorities in traditional health care for children and helps consolidate a distinct fund of medical knowledge.Estimates of developmental and behavioral disorders in India vary considerably.As per American Academy of Pediatrics, developmental disorders are the most prevalent chronic medical conditions encountered in primary pediatric care, and psychosocial and behavioral issues are even more ubiquitous in day-to-day pediatric practice.[2] Although severe disorders can be recognized in infancy, it is unusual to diagnose these disorders before the age of 3 or 4 years and learning disabilities are rarely recognized before the child starts schooling. These children can have trouble adjusting to a normal life and require early medical and educational intervention.[3]

The present study was conducted to document and analyze the demographic and clinical profile of children attending our Pediatric Neurodevelopmental Centre (PND).

Materials and Methods

It was a longitudinal, prospective study carried out in the Pediatric Neurodevelopmental Centre of LokmanyaTilak Municipal Medical College and General Hospital, Mumbai from April 2012 to March 2013. The study was approved by the Institutional Ethics Committee. Children referred for academic and behavioral concerns and attending the PND centre in a tertiary care public hospital were enrolled and those aged 2-15 years were included in the study. The PND centre is a referral centre for diagnosis and certification for SLD, for the state of Maharashtra. Children with developmental disorders secondary to preexisting neurological conditions such as cerebral palsy, tubercular meningitis, epilepsy, and intellectual disability, visual and hearing impairment were excluded. The assessment comprising of a detailed history and thorough neurological examination was done to exclude any obvious genetic or neurological disorders. The clinical history and examination were done by a single observer to avoid inter-observer variability.

Relevant screening tests were applied as under:

1. Suspected Attention Deficit Hyperactivity Disorder-DSM IV TR[4], Vanderbilt Scale-Parent and Teacher Ratings[5]
2. Suspected Autistic Spectrum Disorder-Children<4yrs – m-CHAT[6], DSM IV TR[4] Children > 4 yrs – CARS -2 Standard[7], CARS-2-HF, DSM IV TR[4]
3. Suspected Learning disability - Detailed psycho educational assessment
4. Suspected Conduct disorder – clinical interview, DSM IV TR[4]
5. Suspected Nocturnal Enuresis – Clinical Interview, DSM IV TR[4]

All the cases were seen in detail with a team of developmental pediatricians, clinical psychologists, special educators, psychiatrist, and occupational therapists for the confirmation of final diagnosis. If required, medications were started. A regular follow up of up to 3 months was done to look for the side effects. At the end of the study, a detailed statistical evaluation was done regarding demographic and clinical profile of these patients and their co-existing illnesses.

Data analysis

We calculated the mean and standard deviation for continuous variables and proportion for categorical variables. The mean within two groups were compared with the t-test and the proportions across categories were compared using Chi square test and Fischer exact test for low cell count. Data was analyzed using computerized software. P value of less than 0.05 was considered as statistically significant.

Results

In our study, 400 children were enrolled. Out of these, 230 (58.08%) children had Specific learning disability (SLD), 167 (41.75%) had Attention deficit hyperactivity disorder (ADHD), 20 (5%) were Autistic Spectrum Disorders (ASD), 13 (3.25%) had nocturnal enuresis (NE) and 7 (1.75%) had Conduct disorder (CD). Developmental disorders like ADHD, ASD, SLD were seen more in school going children .i.e. 5 -15 years of age group (Table 1). Higher percentage of males had developmental disorders (ADHD, ASD, SLD, NE, CD) suggesting genetic

bias (Table 2). Higher prevalence of these disorders was reported in upper and upper middle SES suggesting better awareness and accessibility to medical facilities in this class (Table 3). We studied the multidisciplinary approach (behavioral therapy, medication, parental counseling) used for the management of ADHD. 116 (69.46%) out of 167 children with ADHD had a follow up at 3 month interval suggesting a good compliance to therapy. Out of these, 82 were on Methylphenidate and 34 on Atomoxetine. 98.7% of those on methylphenidate and 94.1% of those on Atomoxetine reported improvement on a short term follow up in their academic and social skills.

Discussion

Developmental and behavioral problems are related to delayed milestones, inappropriate feelings, unsatisfactory interpersonal relationships, school learning problems, unhappiness, physical symptoms or fears related to problems at school. These problems range from mild, short lived periods of unacceptable behavior to more severe problems like hyperactivity, conduct disorders and refusal to go to school. They may be transient and resolving on their own or may be complicated and needing professional intervention. Children who are not able to process their behavior or lack problem solving skills can have trouble adjusting to a normal life and require medical and educational intervention. Behavior problems are very common in children, but serious disorders have

Table-1. Age distribution of developmental disorders in the study population

Age group (yrs) (n = 400)	ADHD (%) (n = 167)	SLD (%) (n = 230)	ASD (%) (n = 20)	NE (%) (n = 13)	CD (%) (n = 7)
2-5 yrs (n = 11)	7 (4.19)	2 (0.87)	2 (10)	0 (0)	1 (14.29)
5.1-10 (n = 185)	84 (50.30)	98 (42.61)	9 (45)	7 (53.85)	4 (57.14)
10.1-15 (n = 204)	76 (45.51)	130 (56.52)	9 (45)	6 (46.15)	2 (28.57)
	p = 0.087	p = 0.002*	p = 0.168	p = 0.848	p = 0.131

ADHD-Attention deficit hyperactivity disorder, SLD- Specific learning disability, ASD-Autistic Spectrum Disorders, NE-Nocturnal Enuresis, CD-Conduct disorder (Some patients had more than one disorder)
Statistics done using Chi square test (p < 0.05 = significant*)

Table-2. Gender distribution of developmentaldisorders in the study population

Gender	ADHD (%) (n = 167)	SLD (%) (n = 230)	ASD (%) (n = 20)	NE (%) (n = 13)	CD (%) (n = 7)
Male (n = 318)	136 (81.44)	178 (77.39)	18 (90)	12 (92.31)	4 (57.14)
Female (n = 82)	31 (18.56)	52 (22.61)	2 (10)	1 (7.69)	3 (42.86)
	p = 0.417	p = 0.272	p = 0.392	p = 0.482	p = 0.155

ADHD- Attention deficit hyperactivity disorder, SLD- Specific learning disability, ASD- Autistic Spectrum Disorders, NE- Nocturnal Enuresis, CD- Conduct disorder (Some patients had more than one disorder)
Statistics done using Chi square test (p < 0.05 = significant*)

Table-3: Correlation of Socio economic status in the study population

SES	ADHD (%) (n = 167)	SLD (%) (n = 230)	ASD (%) (n = 20)	NE (%) (n = 13)	CD (%) (n = 7)
Upper	74 (44.31)	96 (41.74)	0 (0)	5 (38.46)	4 (57.14)
Upper middle	45 (26.95)	44 (19.13)	2 (10)	4 (30.77)	0 (0)
Lower middle	43 (25.75)	67 (29.13)	14 (70)	3 (23.08)	3 (42.86)
Lower	5 (2.99)	23 (10)	4 (20)	1 (7.69)	0 (0)
	p = 0.021*	p = 0.002*	p < 0.001*	p = 0.75	p = 0.451

been reported between 10% and 15% in different studies.[8]

The prevalence rate of ADHD in our study (41.75%) was higher as compared to other studies like Swanson and others (2-14%) as many children get referred to our clinic as it is a tertiary care hospital.[9]Also since our centre caters to children with learning problems, we had more number of school age children. These reasons can account for the sampling bias. Our findings of male predominance amongst ADHD children were consistent with a study conducted in which out of the 51 children, 44 (86.3%) were boys and 7 (13.7%) were girls with a ratio of 6.3:1 and Wolraich et al with M: F ratio approximately 3:1 to 4:1.[10,11]ADHD was highly prevalent in upper and middle socio-economic class consistent with a study done where prevalence of those belonging to upper class was 10%, upper middle class 82% while lower middle class 8 %.[12]

Prevalence of Specific Learning Disability was 57.5%. It was much higher compared to previous studies reported in the literature that reported 13-15%.[13-14] It was also observed more in school age children as also reported by previous research.[15]The pattern of male predominance (M: F = 3.4 : 1) also correlates with the literature.[16] Specific Learning Disability was seen more in children belonging to upper class suggesting better awareness and accessibility of this stratum of society to healthcare services. Similar observations were made by researchers in another study.[17]

Autism spectrum disorder was seen in 5 % of the study population which was higher than the western prevalence estimates of 3 to 16 per 10,000.[18] 90% of these children belonged to 5-15 years age group. There is a poor awareness of ASD not only in general population but also in health care providers. This can account for the late referral of child to the tertiary care hospital. In our study, males with ASD were 90% and females were 10% (M: F = 9:1). These findings correlate with a study of 969 children of which males were 86% while females constituted 14 %.[19] In a cross sectional study conducted in USA, it was found that prevalence increases with increase in SES perhaps due to differential access to paediatric and developmental services.[20] Similar observations were made in our study.

The prevalence of Nocturnal Enuresis (3.25%) correlates with findings of studies varying between 2 to 5 % among school children.[21] We observed that the prevalence of Nocturnal Enuresis decreases with increasing age suggesting neuronal maturity as the age advances. Similarly,in an epidemiological study on Nocturnal Enuresis reported that the overall prevalence showed decreasing trend with increasing age.[22] Nocturnal Enuresis was observed more in males similar to a study by one of the authors (AD).[23] Out of the entire study population, 1.75% children were diagnosed with Conduct Disorder. Amongst these, majority were males belonging to the age group of 5-15 years. Similar observations were made by researchers with the overall prevalence of 6.6%, with occurrence in boys 3–5 times greater than in girls.[24] Small sample size was a limiting factor in this observation.

Conclusions

Because of rapidly changing socio-economic conditions, the development and behavioral problems are increasing. Also awareness about these mental health problems has been increasing over the last decade. From this study, we observed the specific trend of occurrence of these developmental and behavioral disorders. Accordingly, we can use the strategy of targeted intervention to ensure early attention to these children.

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Original Article

Emotional Intelligence and Mental Health Deficiencies in Criminals after Imprisonment

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ABSTRACT

Background: *Emotional intelligence is a social intelligence that enables people to recognise their own and other persons' emotions. Moreover, it enables people to differentiate those emotions, and to make appropriate choices for thinking and action. It is an intelligence that may be learned, developed and improved. Sometimes in life, the individual goes through the toughest phase of life, which mentally and emotionally harms the person.* ***Objective:*** *Present study attempts to investigate the level of emotional intelligence and mental health deficiencies which occur in criminals after imprisonment.* ***Method:*** *A total of 60 subjects were selected using purposive cum incidental sampling among which 30 were male and 30 were female. Emotional Intelligence was measured using Emotional Intelligence Test by N.K.Chadha and Dalip Singh, Mental Health was measured with Jodhpur Mental Health Inventory by M.C. Joshi and A.K. Malik.* ***Results:*** *The results so obtained revealed that there was statistically significant difference among male and female criminals after imprisonment on the lines of emotional intelligence such as maturity, competency etc and mental health deficiencies.* ***Conclusion :*** *On the basis of research finding it can be concluded that things which are not acceptable in the society viz. committing a crime or not following the law and order of the state that results in imprisonment may often effect the emotional and mental perspective of the concerned person.*

Keywords*: Emotional Intelligence, Mental Health, Criminal*

Introduction

People who rise to the top of their field whether it is Management, Psychology, Law, Medicine, Engineering or Banking are not just good at their jobs but they are easy going, flexible and optimistic as well. In other words, it takes more than traditional cognitive intelligence to be successful at work. It also takes 'Emotional Intelligence', the ability to restrain negative feelings such as anger, self-doubt, stress, anxiety and instead focus on positive ones such as confidence, empathy and congeniality. According to Salovey and Mayer, 1990 "Emotional intelligence includes an 'ability to monitor ones' own and others' feelings and emotions, to discriminate among them and to use this information to guide ones' thinking and actions."[1] It is the ability to adaptively recognize, express, regulate and harness one's emotions (Schutte et al., 1998).[2] Personal or emotional intelligence has been found to vary by age or developmental level and gender (Gardner, 1999).[3] The five main components of EI given by Daniel Goleman are:[4]

1. Self Awareness
2. Self Regulation

3. Interpersonal Motivation
4. Empathy
5. Social Skills

A number of times, individual feel gloomy, melancholic, and blue as they are not able to adjust between their personal and professional lives. As a result, their mental health is adversely/severely affected. Mental ill health refers to the kind of general mental health problems a person experiences in certain stressful circumstances like poor concentration, mood swings, sleep disturbances.

Such problems are usually of temporary nature, are relative to the demands of a particular situation and generally respond to support and reassurance. Mental illness can be defined as the experiencing of severe and distressing psychological symptoms to the extent that normal functioning is seriously impaired. A study by Silver et al, 2008 suggests that mental illness tend to lead to deviant behaviour rather than violent behaviour; mental illness is a causal factor in deviant behaviour, some of which involves violence, and that the more deviant the behaviour, the greater the effect of mental illness.[5]

According to Kimberley & Covey, being a criminalized person means much more than just being convicted of a criminal offence. It also signifies that moving forward, this person will be labelled as an untrustworthy individual. Once convicted of an offence, an individual is destined for a lifetime of receiving feeble excuses, constant rejection, ongoing anxiety and painful indecisiveness about disclosing past convictions. Due to being called upon repeated judicial hearings, social rejection is faced by the person who is already battling emotional and mental trauma. The vast majority of offenders are generally ordinary people who may have made bad decisions during a difficult time in their lives. Statistics show that the majority of criminalized folks come from a background of poverty, inadequate education, abuse, trauma, and addiction/alcoholism.[6]

A research by Callow and May 2008 suggests that female offenders show significant emotional literacy deficits compared to the normal population especially in areas of empathy, social responsibility and interpersonal relationships.[7]

The type of damage that a person goes through after imprisonment includes that is the social rejection and the stigma attached which harms his/her life and self-esteem. It often results in low level of emotional intelligence and deteriorating mental health as it is a vicious cycle.

A research by Sharma, Prakash & Singh shows that a group of convicted offenders obtained significantly lower scores on all domains of MEII such as intrapersonal awareness (own emotion), interpersonal awareness (others emotions), intrapersonal management (own emotions), interpersonal management (others emotions), and aggregate emotional quotient in comparison to their normal counterpart.[8]

According to Boseley, 2015 Ex-prisoners with common mental health problems, such as bipolar disorder, and who misuse drugs and alcohol are more likely to commit violent offences after their release than other former prisoners.[9]

Objectives

1. To compare the level of emotional intelligence between male and female criminals.
2. To study the differences between the degree of intensity of mental health deficiencies in male and female criminals.
3. To study the relationship between emotional intelligence and mental health deficiencies.

Hypotheses

$H_0$1 = No gender difference exist on the measures of emotional intelligence.

$H_0$2 = No gender difference exist on the measures of mental health deficiencies.

Variables

Independent Variable – Gender

Dependent Variable- Emotional Intelligence and Mental Health Deficiencies

Methodology

Sample & Design

60 Prisoners

Male	Female
30	30

A sample of 60 criminals who completed their imprisonment was selected using purposive sampling method.

Tools Used

1. Emotional Quotient Test by N.K. Chadha and Dalip Singh. This test measures three psychological dimensions such as emotional sensitivity, emotional maturity and emotional competency. The test has a test-retest and split-half reliability of 0.94 and0.89 respectively and validity of 0.89.[10]
2. Jodhpur Mental Health Inventory by M.C. Joshi & A.K. Malik.[11] The test consists of 12 sub-scales including one lie scale. It has not been validated yet by the developers of the test.

Statistical Analysis

t-test was used for comparing scores of emotional intelligence and mental health deficiencies among criminals (male and female). For studying relationship between emotional intelligence and mental health deficiencies, correlation was applied.

Result and Interpretation

Table 1 shows comparison of males and females on the measures of Mental Health Inventory and its sub-scales. The data so obtained reveal that on certain sub-scales of JMHI, significant difference was found between male and female criminals. On the sub-scale of Acceptance of Emotional Control (AEC), difference was significant among males and females where the mean of males (10.73 ± 2.56) was found to be lower in comparison to the mean of females (11.63 ± 3.53) and the t-value was 2.13. Realistic Evaluation of Achievement (REA) shows that significant difference exists among males and females where mean of males (12.27 ± 3.16) was found to be higher than the mean of females (10.70± 2.82) and t-value was 3.13.

Next sub-scale which is Acceptance of Reality (AR), significant difference was found among males and females, mean of males (11.83 ± 2.12) was higher in comparison to the mean of females (8.50

Table 1: Shows Mean SD and t-values among Male and Females on Jodhpur Mental Health Inventory

Variable	Gender	N	Mean	S.D.	t
Realistic Self Appraisal (RSA)	Female	30	5.63	2.20	-1.87
	Males	30	6.53	1.46	
Social Acceptance (SA)	Female	30	6.43	2.10	-0.87
	Males	30	7.07	2.21	
Philosophy of Life Directedness (PLD)	Female	30	5.80	2.22	0.13
	Males	30	5.70	2.02	
Responsibility Acceptance (RA)	Female	30	7.27	3.03	1.13
	Males	30	5.27	2.73	
Acceptance of Emotional Control (AEC)	Female	30	11.63	3.53	2.13*
	Males	30	10.73	2.56	
Realistic Evaluation of Achievement (REA)	Female	30	10.70	2.82	3.13**
	Males	30	12.27	3.16	
Acceptance of Reality (AR)	Female	30	8.50	3.19	4.13**
	Males	30	11.83	2.12	
Goal Orientation (GO)	Female	30	7.50	2.74	5.13**
	Males	30	12.97	2.88	
Autonomy (AUTO)	Female	30	11.00	2.05	6.13**
	Males	30	13.73	3.72	
Outer Orientation (OO)	Female	30	11.27	2.61	7.13**
	Males	30	11.90	3.70	
Realistic Appraisal of Situation (RAS)	Female	30	8.73	2.16	8.13**
	Males	30	11.87	3.94	
Happiness (HE)	Female	30	8.23	1.89	9.13**
	Males	30	10.53	2.30	
Lying (L)	Female	30	6.90	3.10	10.13**
	Males	30	6.73	2.94	
Total Mental Health	Female	30	109.60	14.47	11.13**
	Males	30	127.13	15.91	

*p Significant at .05 level; **p Significant at .01 level

± 3.19) and t-value was 4.13. Goal Orientation (GO) reveals that significant difference was found among males and females where mean of males (12.97 ± 2.88) was found higher than mean of females (7.50 ± 2.74) and t-value was 5.13. On the sub-scale of Autonomy (AUTO), significant difference was found among males and females where mean of males (13.73 ± 3.72) was higher in comparison to the mean of females (11.00 ± 2.05) and t-value was 6.13.On Outer Orientation (OO) significant difference was found among males and females, where mean of males (11.90 ± 3.70) was found to be higher in comparison to the mean of females (11.27 ± 2.16) and t-value was 7.13. On Realistic Appraisal of Situation (RAS) which is another sub-scale of the inventory, significant difference was found among males and females where mean of males (11.87 ± 3.94) was found to be higher than mean of females (8.73 ± 2.16) and t-value was 8.13. On the Happiness (HE) sub-scale significant difference was found among males and females, where mean of males (10.53 ± 2.30) was found to be higher than mean of females (8.23 ± 1.89) and t-value was 9.13. On the last sub-scale i.e. thirteenth sub-scale which is Lying (L), significant difference was found among males and females, where mean of males (6.73 ± 2.94) was lower in comparison to the mean of females (6.90 ± 3.10) and t-value was 10.13. The total score of mental health shows that there is a significant difference among males and females where the mean of males was found higher (127.13 ± 15.19) than the mean of females (109.60 ± 14.47) and t-value was 11.33.

Table 2 shows comparison of males and females on the measures of Emotional Intelligence and on its sub-scales on the sub- scale of Maturity, which is reflected in the behavioural pattern while dealing with the inner self and the immediate environment, it was observed that significant difference exists among males and female where mean of males (66.17 ± 9.97) was higher in comparison to the mean of females (59.83 ± 10.13) and the t-value was 2.44. A total of EI shows that there exists significant difference among male and female criminals and mean of males (219.33 ± 22.16) was higher than mean of females (203.83) and value of t was 2.56. The scores so obtained reveals that male criminals are more stable in terms of emotions and are mature enough to deal with the current situations whether internal or external in comparison to female criminals after imprisonment.

Table 3 shows correlation between emotional intelligence and mental health deficiencies among male and female criminals after imprisonment. The result obtained shows that RSA which is a sub-scale of JMHI is associated with one dimension of EI scale which is sensitivity (pearson 'r' = .302). SA is correlated with sensitivity (pearson 'r' = .287). AEC is interrelated with competency (pearson 'r' = .254). REA is highly correlated with competency (pearson 'r' = .517) and with total EI score (pearson 'r' = .430). AR is associated with sensitivity (pearson 'r' = .303) and highly correlated with competency (pearson 'r' = .340) and total EI score (pearson 'r' = .380) and total mental health score is interrelated with sensitivity (pearson 'r' = .266), competency (pearson 'r' = .291) and total EI score (pearson 'r' = .328).

Table-2: shows Mean SD and t-values among Male and Female on Emotional Intelligence Scale

Sub Scale	Gender	N	Mean	Std. Deviation	t
Sensitivity	Female	30	30.83	6.31	-1.19
	Males	30	33.00	7.72	-1.19
Maturity	Female	30	59.83	10.13	-2.44*
	Males	30	66.17	9.97	-2.44*
Competency	Female	30	113.17	15.23	-1.69
	Males	30	120.17	16.89	-1.69
Total EI	Female	30	203.83	24.62	-2.56*
	Males	30	219.33	22.16	-2.56*

*p Significant at .05 level; **p Significant at .01 level

Discussion

The present study aims to measure emotional intelligence and mental health deficiencies in criminals after imprisonment.

The findings reveal that there exists statistically

Table-3: shows Correlation between Emotional Intelligence and Mental Health Deficiencies among males and females

Dimensions	Sensitivity	Maturity	Competency	Total EI
RSA	.302*	0.093	0.148	0.226
SA	.287*	0.105	0.05	0.161
PLD	-0.036	0.162	-0.155	-0.045
RA	-0.099	0.151	-0.11	-0.038
AEC	-0.036	0.093	.254*	0.199
REA	0.179	0.078	.517**	.430**
AR	.303*	0.153	.340**	.380**
GO	0.21	0.111	0.134	0.197
AUTO	0.203	-0.047	0.195	0.169
OO	0.22	-0.018	0.136	0.146
RAS	0.126	0.106	0.109	0.154
HE	0.066	-0.023	0.199	0.142
L	-0.119	-0.147	-0.184	-0.22
Total Mental Health	.266*	0.132	.291*	.328*

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

significant difference among male and female criminals on the measures of mental health. Comparison of the mental health scores of male and female imprisoned criminals reveal a significant difference, with males showing better scores of mental health, probably indicating better adaptation to changing stressful situation and showing less deterioration, indicated by better scores in the dimensions of AEC, REA, AR, GO, AUTO, OO, RAS, HE and L. The total mental health score also indicates high significant difference among both the genders which signifies that male criminals often posses better mental health conditions even after some unpleasant experiences. This finding is supported by the study done by Shannon et.al. 2013 wherein it was observed that female offenders report greater incidences of mental health problems and serious mental illness than do male offenders.[13]

On the measures of Emotional Intelligence, comparison between the scores of male and female criminals after imprisonment revealed that there exist significant difference among males and females on the grounds of emotional intelligence and its sub scales. The result so obtained supports the studies done previously. One of the study shows that men are more aggressive than women and that the forms of aggression differ by gender, with females evidencing more relational aggression and less physical aggression than males.[14]

The findings of interrelationship between emotional intelligence and mental health deficiencies revealed that those male and female criminals who have high level of emotional intelligence are less vulnerable to mental health deficiencies after imprisonment.

The results so obtained clearly shows that male criminals were mentally healthier and were less vulnerable to mental diseases in comparison to female criminals after imprisonment. Several studies have shown that emotional abilities are of particular relevance to psychological health and wellbeing. It has also been found that emotional problems are related to the tendency to get involved in deviant behaviour and self-destructive acts.[15]

Conclusions

The findings of the study reveal that there is a significant difference on the measures of emotional intelligence and mental health deficiencies among imprisoned male and female criminals. As a preventive measure, it is suggested that after the duration of imprisonment gets over, the ex- criminals should be given effective therapeutic interventions and behaviour modification therapies to overcome emotional and mental blockages so that they can also contribute their best in the development of the society and country as a responsible citizen.

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Original Article

Management of Bipolar II disorder through CBT: A Case Study

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ABSTRACT

Background: *Bipolar II disorders have an early onset, chronic course and high suicidality. Psychopharmacological treatment is challenging. As there is role of environment factors, hence psychological measures are also seen as an option in management.* ***Methodology:*** *The given case study discuss about a 25 years old unmarried male who is having history of mental illness for last 9 years presenting to the clinic with recent history of two suicidal attempts and family history of obsessive symptoms in father and anxiety disorder in paternal cousin brother. Psychological evaluation was done by Beck's Depression Inventory, MCMI III and Cognitive Distortion Scale. Treatment consisted of psychoeducation and Cognitive Behavior Therapy for addressing suicidality, hopelessness, self-defeating ideas, improving activities of daily living and management of hypomania.* ***Results & Conclusion:*** *Improvement was seen in depressive cognitions, activities of daily living, medication adherence and ability to deal hypomania. Cognitive Behavior Therapy shows effective results in management of Bipolar II Disorder.*

Keywords: *Bipolar II disorder, Suicide, Hypomania, Cognitive Behavior Therapy.*

Introduction

Bipolar II (BPII) disorders are characterized by periods of depression and hypomania. Originally Dunner et al identified group of patients with severe depression who were not getting well and needed frequent hospitalization for their treatment. The intervening or better functioning periods were characterized by episodes of hypomania.[1] They were grouped under Bipolar II disorder which was distinct from Bipolar I Disorder and Unipolar Depression.

While as per DSM IV, it has a lifetime community prevalence of 0.5% but epidemiological studies have reported a prevalence of upto 5%.[2] Bipolar II disorder is under-diagnosed clinically and mostly treated as unipolar depressive episode.[3] They are at much risk of relapse and high rate of suicide attempts and completed suicides are seen. Patients with Bipolar II disorder show an early onset, chronic course, with atypical features and interspersed with hypomania and mixed episodes. Comorbid panic disorder, phobias, drug and alcohol abuse, eating and personality disorder is seen.[4,5]

The psychopharmacological treatment is challenging. Due to the limited effect of pharmacotherapy, role of environmental stressors is sought and correspondingly the adjuvant psychosocial treatment is being looked after. Different psychological measures like individual psychotherapy, psychoeducation, family therapy, interpersonal therapy and cognitive behavior therapy were used for the management of bipolar disorders. Family therapy and cognitive behavior therapy were found to be useful in depression associated with bipolar illness.[6]

Keeping that in the background, we present a case of bipolar II disorder with mixed features as per DSM 5 diagnostic criteria. Cognitive behavior therapy was done for management of the mixed features and suicidality in the patient.

Case Report

Mr. D is a 25 years old, unmarried graduate male, belonging to a middle class family, working in a managerial level job at a private company and staying with his parents and one elder sibling. Mr. D presented himself with complaints of periods where thoughts would run through his mind. When he is at work, he would work continuously for 12 - 16 hours. His mind races during work and there were periods of insomnia along with overall feeling of elation. However, he would also go through phases where he felt low and his mood revolved around negative processes such as what is the reason of life, why does his mind run so fast at times and why can't he control his thoughts and relax. He started to feel that something is wrong with him. During this phase, he stopped interacting with family members. He felt choked at work and hoped the day would pass by so that he can be alone again. He felt so low that he started thinking of ending his life. In the process, he attempted suicide three times in past but was saved by family members. In his recent attempt, he had taken a mix of 100 paracetamol tablets and 20 clonazepam 0.5mg tablets. He reported that this fluctuation of mood had begun 9 years back. He stopped going to work as he felt unable to deal with his thoughts and life.

In Feb 2006 when he was in 12th standard he had a phase where he was elated most of the times and felt he was he was better than everyone, would talk fast, had more energy than usual, decreased need for sleep. This phase lasted for 10 days. There was a relationship issue and when it did not work out he attempted suicide twice in a period of one month. Eight ECTs were given then followed by pharmacotherapy. He cleared his 12th exam and got enrolled into Bachelors course. However during these 3 years he had episodes of hypomania which manifested in behavioural issues like mischief in college such as of breaking tube lights for fun and throwing the dustbin around the corridors of class. Around 2009, he again developed low mood. This time his thoughts where that he is not capable of adjusting with others. He had difficulty in controlling his racing mind and felt it's better to die. However, somehow he managed to complete his education but by the beginning of 2012 he again started to feel very low and lethargic. He got into PG course in May 2012 but left the course after 2 days and started roaming in hotels in the city contemplating and trying to attempt suicide through starvation. His family members searched for him and later he returned home. He stopped interacting with his family members and would remain to himself. Pharmacological treatment started and later he joined a job and did well. He developed a relationship in 2013 which broke up two years later, after which he attempted suicide by taking overdose of tablets prescribed to him. He was again given 5 sessions of ECT. Gradually he developed more negative thoughts about life and relationships. He started communicating with his girlfriend but things did not work out and he again attempted suicide around March 2016.Later he was given 6 sessions of ECT. He had stopped going to work since then as was unable to deal with his thoughts and life.

He was prescribed Tablet Sodium Valproate 1000 mg per day, Lamotrigine 50mg per day, Quetiapine 150mg per day, Clonazepam 1mg per day as he stopped responding to past medication which where Tablet Clomipramine 225mg per day and later on Sertraline 150mg per day alongwith tablet Lithium 900mg per day. He had stopped past medication as he felt there was no improvement in his symptoms. Even current medication he did not want to take as he felt they would not work either.

His father had history of obsessive symptoms but did not take any treatment for it. His paternal cousin brother was diagnosed with anxiety disorder and is under treatment for it. He had been a quiet and introvert child. He was focussed more onto studies and didn't have any close friends. He had a brilliant academic track record. He would spend most of the time at home reading story books.

The patient is average built with adequate grooming. Attitude towards examiner was cooperative; patient was able to maintain eye to eye contact. Rapport was established. No abnormal psycho-motor movement observed. His speech was relevant, coherent, goal directed. In mood he said: "*Kuch bhi thik nahi lagta*" (I feel nothing is alright). Objectively, his quality of affect was depressed,

constricted range, decreased intensity with no reactivity. In contents of thought, there was feeling of hopelessness, helplessness and suicidal ideation. No perceptual disturbances found. In higher mental functions, the patient was alert and conscious and was oriented to time, place and person. His level of attention was found to be adequate with intact memory. His judgment was satisfactory and insight of Grade V (I know I have mental problem but I don't know how to overcome).

Psychological tests of Becks Depression Inventory [BDI],[7] Million Clinical Multiaxial Inventory [MCMI-III][8] and Cognitive Distortion Scales [CDS][9] were administered. Finding indicated presence of severe level of depression on BDI (Score 34). On MCMI III Axis II Personality Pattern : BR score of 89 on Depressive and BR score of 86 on Masochistic (Self defeating Scale 8B). AXIS II refers to those enduring and pervasive personality traits that underlie this patient's emotional, cognitive and interpersonal difficulty. That is his habitual and maladaptive methods of relating, behaving, thinking and feeling. On Axis I Clinical Syndromes he scored BR score of 80 on Anxiety(Scale A)BR score of 102 Bipolar (Manic, Scale N) BR score of 106 on both Dysthymia (Scale D) and Major Depression (Scale CC). AXIS I clinical syndromes are disorders embedded within the context of the Axis II styles. They are seen as extensions or distortions of patient's basic personality pattern. On Cognitive Distortion Scales [CDS] he had a T-Score of e" 100 on Helplessness and Hopelessness, T score of 72 on Self Blame, 71 on Self Critical.

Psychotherapeutic management of the case:

Short-term goals:

- Establish a strong therapeutic alliance.
- Developing acceptance towards BP II.
- To reduce the feelings of helplessness, hopelessness, self-blame and self criticalness.
- Coping with suicidal ideas and attempts.
- Enabling the patient to work through hyper positive thinking and racing thoughts during episode of hypomania.
- Medication adherence.
- Resuming occupation.

Long –term goals

- Empowering the patient to deal with his mood disorder.

Methods used during psychotherapeutic intervention:

- Psycho-education
- Cognitive behavior therapy
- Relaxation techniques

Duration of sessions: 12 sessions. Each sessions were of 60 to 80 minutes spanning over a period of 3½ months.

Session 1: Rapport was already established during the assessment phase. Hence, the first session was focused on developing a strong therapeutic alliance. Psycho-education related to the BP II was imparted to the patient as well as the family members and information on how psychotherapeutic intervention along with ongoing pharmacotherapy can help the patient cope through the signs and symptoms of depression and hypomania was discussed. Written Consent was taken for therapy along with short term and long term goals were laid down during this session. It was agreed upon that he would contact the therapist in case of strong ideas related to suicidal attempt came to his mind. Reflective listening was used during this session.

Session 2: The second session focused on how the process of thoughts, emotions and behavior work and impact our life. This session also worked on enabling the patient to develop acceptance towards BP II disorder. Why it is important and how to generate accepting statements for BPII were discussed. How developing acceptance may be difficult initially but once he learns to accept it the next stage of working through it and making positive changes becomes easier. Empathetic listening was also used during this session. Homework on developing accepting statements was given.

Session 3: The third session started with revision of second session's homework. The client expressed that he would keep thinking that he does not have control over his mood. He feared that following phase of hypomania he would plunge down to low again. Therefore, he intentionally tries to not feel excited during the hypomanic phase, which simultaneously makes him emotionally choked and low. During this session, the thoughts that trigger the depressive episodes were laid down. It was discussed how these thoughts impact the functioning of his mood. How the process of depressive

rumination affects his overall functioning was discussed at length.

Relaxation technique of deep breathing was imparted.

Session 4: During this session he spoke about his relationship issue which has taken a set back as a result of misunderstanding due to his mood problem. This session went on to discuss the negative automatic thoughts and the schemas underlying the mood problem and the resulting misunderstandings. How suicidal ideas form as result of feeling of helplessness and hopelessness. Flow chart was used during this session. The cognitive distortions of selective abstraction, dichotomous thinking and overgeneralization were noted. Dysfunctional Thought Record (DTR) was introduced for identifying and formally challenging the negative automatic thoughts during this session. Home work was given for working on the DTR worksheet.

Session 5: Fifth session was started with home work on DTR worksheet. During this session rework was done with the client on his dysfunctional thoughts. Advantages and disadvantages analysis was technique was used to focus on the utility of thoughts of the client. During this session, the client became more aware of how his thoughts were creating a continuous cycle of hopelessness and feeling of helplessness. Further, homework was given to work on the DTR.

Session 6: Sixth session began with deep breathing and previous session's homework was discussed. Since he was spending time at home by just sleeping, activity-scheduling technique was introduced to reduce the inertia. When some pleasurable activity were suggested the patient mentioned that he does not want to do them as he fears that if he goes into excitement phase he may become restless and that happiness or excitement is fake. Here again cognitive errors of thinking were discussed and he was explained that in due course of session the hypomania phases will also be worked on. Thoughts associated with suicidal ideation which were related to other negative thoughts were also worked on. In this session neutral activities like talking a walk in morning, having a good breakfast on time, helping his mother at times were included.

Session 7: Seventh session again worked on the negative thoughts which he was still struggling with and introduction of monitoring of symptoms of hypomania. A checklist was prepared to address hyper-positive thoughts and associated behaviors and explained to him. The patient was motivated by saying that his family is always there to support him and once he learns to support himself through these phases he will overcome the challenge against BPII. By seventh session patient started working from home.

Session 8: Eighth session focused on how to manage hypomanic phase. This session went on to work on modifying hyper positive thinking. The automatic thoughts that rush through his mind, how much does he believe them at that point of time. The role of cognitive errors were discussed, the way they play a role in depression in the same manner they play a role in hypo manic thinking.

Session 9: Ninth session further went on to discuss how more balanced and healthy thought can work against the cognitive errors. The need to identify impulsive thinking and behavior was discussed and how to work on them by distraction techniques and relaxation exercise was taught. Two Person Feed Back Rule [10] and Forty Eight Hours Rule [10] were discussed. By ninth session, he started going to office.

Session 10: Tenth session went on to strengthening of coping statements to deal with the disorder. A list of distracting coping statements was prepared. A plan and a checklist to avoid future suicide attempts were agreed upon. Reassessment of activity schedule was done.

Session 11: Eleventh session focused on implementation of daily mood tracking chart ranging from severely elevated to severely depressed that would enable him to have visual depiction on the changes that come along with the change of thoughts during depressive as well as hypomanic episodes. Each time he sees that he is sliding too low or high, he would have to work on the thoughts underlying or triggering his mood.

Session 12: During the twelfth session, it was explained that relapse may occur but his efforts towards his treatment procedure must continue. A personalized wellness plan was charted out which focused on the thoughts, behavior and actions that needs to kept in check. The plan also included the information about the support group who can help him in times of crisis or relapse.

Results

The efficacy of Cognitive Behavior Therapy for management of Bipolar II was determined, on the basis of reduction of scores on Cognitive Distortion Scale, Becks Depression Inventory and successful achievement of the therapeutic goals of medication adherence, coping with suicidal ideas and attempts, working through hyper positive thinking, racing thoughts, improving activities of daily living and resuming of occupation.

Table-1. Comparison of scores on Cognitive Distortion Scale before and after intervention.

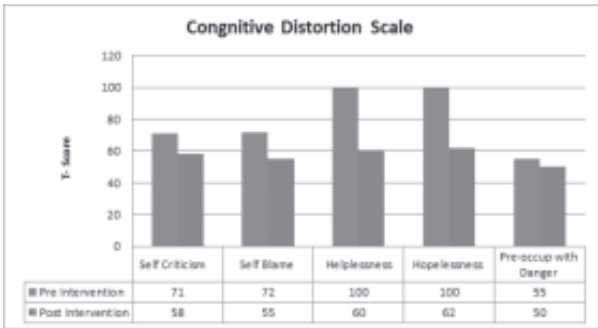
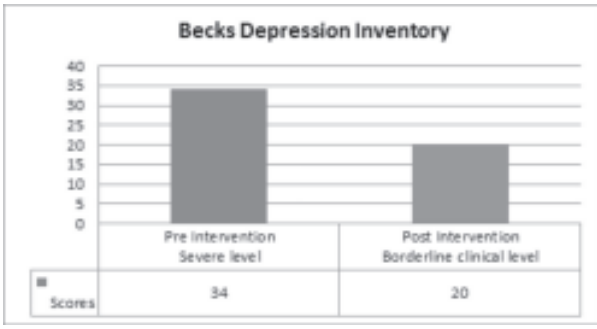


Table-2. Comparison of scores on Becks Depression Inventory before and after intervention



It is to be noted that in the past he was under pharmacotherapy treatment yet no significant improvement was observed. However, with the psychotherapeutic intervention of cognitive behavior therapy there were marked improvements in his ability to deal with his thought process, improvement in adaptive behavior and overall coping with the disorder.

Conclusion

There was significant improvement in the patient's ability to deal with depressive cognition, activities of daily living, medication adherence and increase in ability to deal with hypomania. Hence it can be concluded that Cognitive behavior therapy showed effective results in the management of Bipolar II disorder.

Future sessions

Future therapy sessions would focus further on strengthening interpersonal relationship in patients life.

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Original Article

Tobacco use pattern and relation of nicotine dependence with severity of illness in schizophrenic patients

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ABSTRACT

Introduction: *Schizophrenia, impact negatively on the cognitive, perceptual, vocational, social and family functioning of the patients which cause significant illness related disability. Excessive and increased nicotine use by them serves as a form of self-medication to temporarily reduce positive symptoms (hallucination) & negative symptoms of disorder. But it causes serious impacts including excess morbidity and mortality, reduced treatment effectiveness, greater clinical and economic consequences.* ***Objectives:*** *To evaluate the pattern of tobacco use, relation of tobacco dependence with severity of illness among schizophrenic patients.* ***Methods:*** *The study was conducted at psychiatry department of a tertiary care hospital. A total of 318 consecutive patients of >2 years illness were recruited. The patterns of Tobacco-use assessed by Semi-structured Performa, nicotine dependence and severity of illness were assessed by Fagerström Test for Nicotine Dependence (FTND),Positive and Negative syndrome Scale Rating Criteria (PANSS) respectively.* ***Results:*** *Study found that 53.4% were tobacco users & 46.5% were non-users. Among them 91.2% were daily users. To quit tobacco use only 4.7% (8) tobacco-users had good motivation while 18.8% (32) had fair and 76.5% (130) had poor motivation. (P=0.009).More than half 54.4% (68) of patients has increased consumption after onset of schizophrenia (p=0.003). On the basis of Fagerström Test for Nicotine Dependence (FTND - smoke, chewed) majority of participants having moderate dependence (27% smokers, 44.4% chewers) followed by high dependence (25.4%, 32.4% respectively) (p=0.003). Severity of psychopathology showed strong significant positive correlation with nicotine dependence (r=0.335, p=0.037).* ***Conclusion:*** *Present study showed that schizophrenic patients are moderate to severely dependent for tobacco-use. Training of mental health providers should include raising awareness of the problem, developing skills to help those with severe mental illnesses to stop tobacco use, and educating* families and caregivers about health risks associated with it.

Keywords: Schizophrenia, Nicotine dependence, Illness disability

Introduction

Tobacco use is one of the preventable causes of poor health and premature mortality[1]. Various epidemiological studies have shown that smoking rates among psychiatric patients are double as compare to general population[2]. Some studies have also found that smokers with serious mental illness have negative impact on clinical and public health outcome such as more severe psychiatric symptoms due to involvement of biological pathways which modulates the expression of pathophysiology[3-6], implications for pharmacological treatment, barriers

to cutoff, compromised quality of life,[4] multiple substance abuse[7] and more medical co-morbidities[4,8] than nonsmokers.

It is not surprising that tobacco use contributes to serious negative impacts among people with schizophrenia, increased risk of *cardiovascular disease,* increased rates of *mortality* and morbidity, decreased treatment effectiveness, significant financial hardship[5,9,10] and other serious mental illnesses.[8,11,12]

Unluckily, the longevity of people's life with psychiatric illnesses such as schizophrenia and bipolar affective disorder is near 10 to 20 years shorter than the general population (World Health Report, 2001),[13] predominately because of early death from tobacco-related illnesses such as hypertension and chronic obstructive pulmonary disease.

In India, consumption of tobacco is in both smoked and smokeless forms.[14] Here, tobacco-smoking is largely in the form of *beedis* and cigarettes. Beedis are more popularized and its smoking starts at an early age. The smokeless forms of tobacco consumption in India include chewing tobacco and inhalation of snuff. Chewing tobacco is mostly consumed in the form of *gutkha* and *zarda*. *Gutkha*, frequently used by women and children, it is chewed and then spited out.

In tobacco, nicotine is primary active compound and found highly addictive.[15] Previous studies indicate that persons with serious mental illness having more heavily and longer consumption histories, and have lower rates of cessation compare to overall population.[16-18]

The aims of this study were to evaluate the tobacco use pattern among patients suffering from schizophrenia at tertiary centre government hospital. We also examine the association of tobacco dependence with severity of symptomatology of schizophrenia with PANSS.

Methods

This was a descriptive cross-sectional study. The study population included patients attended psychiatry department of a tertiary care government hospital, Udaipur. A total of 318 consecutive patients meeting the study criteria were included. We recruited subjects aged 18 or more. Subjects meeting ICD-10 criteria for Schizophrenia and duration of illness at least 2 years were approached for participation and those providing consent were included in the study. Those refusing to provide consent or those who were unable to cooperate for participation in the study due to a physical / neurological illness, were excluded from the study. The socio demographic profile of the study subjects was recorded using the study Performa. Subsequently the subjects were asked about the use of pattern of tobacco products (smoked -cigarettes, bidi as well as smokeless- gutkha, khaini, tobacco powder) by using semi-structured Performa. Those reporting affirmatively in response to the question on use of tobacco products were assessed using Fagerstrom Test for Nicotine Dependence (FTND) (smoking as well as smokeless). FTND- smoking is a widely used six-item questionnaire used to screen for severity of dependence on smoked tobacco. FTND- smokeless (FTND-ST) is a nine-item instrument used to evaluate the level of nicotine dependence for smokeless tobacco.After that scales measuring the severity of illness for schizophrenia, Positive and Negative Syndrome Scale Rating Criteria (PANSS) was applied. Data were analyzed statistically by using SPSS 19 software.

Results

Demographic and clinical Characteristics:

Figure 1 depicts tobacco consumption status among participants. Out of 318 tobacco-user were found 53.4% (170); among them 41.2% (131) of patients reported tobacco use in at least one form; chewing in 32.4% (103), smoking in 8.8% (28) and 12.3% (39) used both form of tobacco.

The majority of the participants in this study fell within the age range 25-45years with mean age of 35.19 (SD=9.7) years. The mean age of onset of schizophrenia (in years) was 26.56 (SD= 7.9); in male 25.44 (SD= 8.2) and in female 28.18 (SD= 8.9) while mean duration of illness (in years) was 8.85 (SD=6.5). The mean age (in years) of onset of tobacco-smoking was 23.51 (SD=8.8) and for tobacco-chewing was 24.04 (SD=8.5) both were earlier (2-3years) than compare to mean age of onset of illness that is 26.56(SD=8.5) in our study.

The mean duration (in years) of smoking was 12.11 (SD= 8.9) and 10.44 (SD= 8.1) for chewing; both were longer than mean duration of illness 8.85 (SD=6.5).

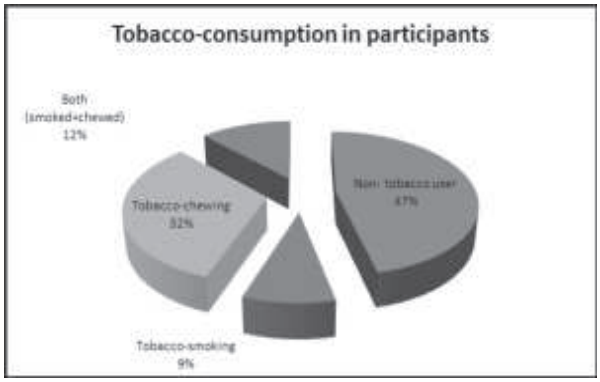


Figure 1: Tobacco-consumption in participants

The Socio-demographic characteristics of the patients are depicted in table 1. A total 318 patients, 53.5% (170) were tobacco-users, among them 41.9% (133) were male and 11.6% (37) were female, 51.57% (164) were Hindu and approx 2% (6) were Muslim. In tobacco-user group 35.22% (112) were belong to rural community and 18.23% (58) were from urban while in non tobacco-users 32% (102) were from rural and 14.46% (46) were urban. Most of them, 76.4% (243) belonged to nuclear family, 13.2% (42) joint and 10.4% (33) extended joint family type. In present study 60% (191) patients were married and living with their spouse, 4.4% (14) were married but living apart as separated, 17.6% (56) were not married, 17.9% (57) were divorced.

Comparison of pattern of Tobacco-use in different groups of sample

In Table 2 it was found that approximately 60% (95) of patients started tobacco consumption before illness while 26.5% (45) simultaneously and 17.6% (30) after illness. On the basis of consumption status; out of 170, maximum of them 91.2% (155) were daily user while rest were 8.8% (15) occasional user. The present study showed that 68.8% (117) patients never attempted to quit, 15.3% (26) attempted once or 15.9% (27) attempts multiple.

To quit tobacco use only 4.7% (8) tobacco-users had good motivation while 18.8% (32) had fair and 76.5% (130) had poor motivation.

Patient's attitude towards causation of tobacco use was variable. 37% (63) patients thought that mental illness was a causative factor, 17.6% (30) believed reason was psycho-social stress, 13% (22) believed due to peer pressure while 32.4% (55) believed that they consume it as culturally acceptable manner.

Approximately 20% (32) felt that severity of illness was increased after tobacco consumption and decreased in 1.2% (2) patients while 79.4% (135) believed that illness was not affected by tobacco-use.

More than half 54.4% (68) of tobacco-users were believed that after onset of illness tobacco consumption had increased and 45.6% (57) were

Table 1: Socio-demographic and clinical characteristics of the sample (N=318)

Variable	N (Percentage)	
	Non-tobacco users	Tobacco-user
Admission type		
Outdoor	115 (36.16%)	121 (38.05%)
Indoor	33 (10.37%)	49 (15.4%)
Gender		
Male	55 (17.3%)	133 (41.82%)
Female	93 (29.24%)	37 (11.6%)
Religion		
Hindu	141 (44.33%)	164 (51.57%)
Muslim	7 (2.2%)	6 (1.9%)
Marital status		
Unmarried	21 (6.6%)	35 (11%)
Married	90 (28.3%)	101 (31.8%)
Divorced	27 (8.4%)	30 (9.4%)
Separated	10 (3.1%)	4 (1.25%)
Residential status		
Rural	102 (32%)	112 (35.22%)
Urban	46 (14.46%)	58 (18.23%)
Family type		
Nuclear	107 (33.6%)	136 (42.76%)
Joint	25 (7.5%)	17 (5.34%)
Extended	16 (5%)	17 (5.34%)
Education		
Illiterate	56 (17.6%)	48 (28.2%)
Primary	17 (5.3%)	33 (19.4%)
High school	61 (19.18%)	80 (25.15%)
U.G./P.G.	11 (7.43%)	7 (2.2%)
Professional	3 (0.9%)	2 (0-6%)
Occupation		
Unemployed	46 (14.5%)	31 (9.78%)
Unskilled	16 (4.7%)	37 (11.63%)
Semiskilled	1 (0.67%)	9 (2.83%)
Farmer/clerical/shop-owner	78 (24.5%)	81 (25.47%)
Skilled	0 (0.0%)	4 (1.25%)
Semi-professional	2 (0.6%)	3 (0.94%)
Professional	5 (1.6%)	5 (1.6%)
Family income		
Lower	80 (25.15%)	89 (28%)
Middle	60 (18.86%)	78 (24.52%)
Upper	8 (2.5%)	3 (0.94%)

Table-2: Pattern of tobacco use in study subjects

Sl. No.	Factors of pattern	Variables	Tobacco-smoking% (n)	Tobacco-chewing% (n)	Both (smoked + chewed)% (n)	P value
1.	Onset of tobacco consumption (related to illness)	Before	8.8%(15)	34.1%(58)	12.9%(22)	0.872
		After	2.9%(5)	11.8%(20)	2.9%(5)	
		Simultaneously	4.7%(8)	14.7%(25)	7.1%(12)	
2.	Status of consumption	Occasional	1.2% (2)	4.7%(8)	2.9%(5)	0.779
		Daily	15.3%(26)	55.8%(95)	20.0%(34)	
3.	Abstinence history	No	11.8%(20)	38.2%(65)	18.8%(32)	0.193
		Single	1.8%(3)	10.6%(18)	2.9%(5)	
		Multiple	2.9%(5)	11.8%(20)	1.2%(2)	
4.	Motivation for abstinence	Poor	13.5%(23)	41.2%(70)	21.8%(37)	0.009
		Fair	2.9%(5)	14.7%(25)	1.2%(2)	
		Good	0.0%	4.7%(8)	0.0%	
5.	Attitude for causation	Cultural	5.9%(10)	18.2%(31)	8.2%(14)	0.726
		Mental illness	4.1%(7)	24.7%(42)	8.2%(14)	
		Peer-pressure	2.4%(4)	7.1%(12)	3.5%(6)	
		Psycho-social stress	4.1%(7)	10.6%(18)	2.9%(5)	
6.	Severity of illness after consumption	Same	12.3%(21)	48.8%(83)	18.2%(31)	0.701
		Increase	3.5%(6)	11.2%(19)	4.7%(8)	
		Decrease	0.6%(1)	0.6%(1)	0.0%	
7.	Tobacco consumption after illness	Same	6.4%(8)	35.2%(44)	4.0%(5)	0.003
		Increase	9.6%(22)	27.2%(34)	17.6%(22)	
8.	Family history of tobacco use	No	4.7%(8)	24.7%(42)	7.1%(12)	0.427
		Yes	11.7%(20)	35.9%(61)	15.9%(27)	
9.	Other substance use	No	13.6%(22)	55.6%	19.8%	0.280
		Alcohol	.6%(1)	3.1%(5)	2.5%(4)	
		Bhang	.0%	1.2%(2)	1.2%(2)	
		Ganja	1.2%(2)	.6%(1)	.6%(1)	
10.	Daily expenditure (rupees)	<50	15.3%(26)	60.6%(103)	17.6%(30)	0.000
		>50	1.2%(2)	.0%	5.3%(9)	

believed consumption remained same.

In present study 64% (108) patients showed positive family history for tobacco consumption either in their first degree or second degree relatives. Among study group use of other substance was seen alcohol (10%), bhang (2.5%) and ganja (2.5%). Their daily expenditure in a month for tobacco consumption was more than 50 rupees in 6.5% (11) and 93.5% (159) had less than it.

Nicotine Dependence between different groups of Tobacco-users

As showed in figure 2, on the basis of Fagerström Test for Nicotine Dependence (FTND-smoke, chewed) moderate dependence (27%) seen in smokers as well as in chewers (44.4%) followed by high dependence (25.4%, 32.4% respectively) for nicotine.

a. In Smoking group (FTND-Group)
P value = 0.003

b. In chewing group (MFTND-Group)

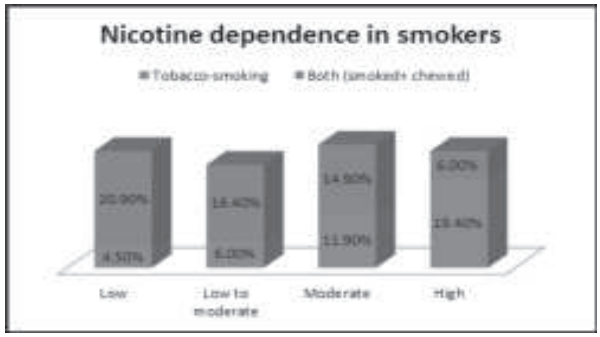
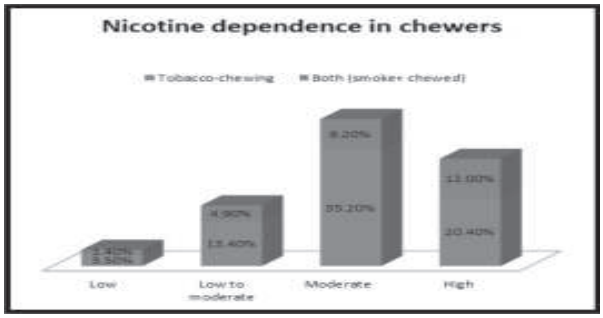


Figure 2: Nicotine Dependence between different groups of Tobacco-users (above and below)



P value = 0.313

Severity of psychopathology among schizophrenia

a) In different groups of tobacco-user

Table 3(a) depicted that the mean of positive syndrome scores (PANSS-P) (22.68 > 20.42, **P Value = 0.027),** the mean of negative syndrome scores (PANSS-N) (20.37 > 18.81, **P Value = 0.007)** and the mean of total PANSS scores (81.18 > 75.14, **P Value = 0.007**) were significantly higher in tobacco user than non-tobacco users. It suggests that greater severity of illness is associated with greater consumption of tobacco.

b) Relationship with Nicotine Dependence

Table 3(b) describes relationship between Severity of psychopathology and Nicotine Dependence among schizophrenic patients. Nicotine Dependence on the FTND scale to the severity of illness as measured by PANSS showed a positive correlation with FTND **(r = 0.335*)**. Here, the result was statistically significant **(P value = 0.037).** It further supports our results of greater severity of illness is associated with high nicotine dependence.

FTNDS-Fagerström Test for Nicotine Dependence

Discussion

The current study was conducted including both outpatient and inpatient at department of psychiatry. In our study moderate dependence (27%) seen in smokers as well as in chewers (44.4%) followed by high dependence (25.4%, 32.4% respectively) for nicotine on the basis of Fagerström Test for Nicotine Dependence (FTND- smoke, chewed). Similarly in Chandra et al[19] study 36% current tobacco users, with 65% of all users reporting moderate to severe nicotine dependence among psychiatric disorder. Oliveira et al[20] reported that out of the 96 smokers, 32 (33.3%) were schizophrenic, among whom, 59.4% (÷2=39.0037, Pr = 0.027) presented high or very high dependence. Table 3(a) depicted that the mean of positive syndrome scores (PANSS-P) was significantly higher in tobacco user than non-tobacco users (22.68, 20.42, P Value=0.027), it was supported by previous studies.[21-23]

Table-3: Severity of psychopathology among schizophrenia

a) Relationship between severity of psychopathology and tobacco-use

Schizophrenia Rating scale	Non tobacco users Mean (SD)	Tobacco users Mean (SD)	P Value
PANSS-P	20.42(9.11)	22.68(9.01)	0.027*
PANSS-N	18.81(4.97)	20.37(5.22)	0.007*
PANSS-G	35.86(10.57)	38.54(9.51)	0.018*
PANSS-T	75.14(22.48)	81.81(21.40)	0.007*

Statistically significant difference found

b) Relationship between severity of psychopathology and Nicotine dependence

PANSS Rating scale	FTND (smoked + chewed)	Significance (2-tailed) (p)
	Pearson Correlation (r)	
PANSS-P	0.188	0.251
PANSS-N	0.222	0.174
PANSS-G	0.289	0.075
PANSS-T	**0.335***	**0.037***

Severity of psychopathology (shown by PANSS) has positive correlation with Nicotine dependence (FTND). Here statistically significant difference found

Note: PANSS-Positive and Negative syndrome Scale

The mean of negative syndrome scores (PANSS-N) was significantly higher (20.37, 18.81, P Value = 0.007) in our study while difference in finding was seen in previous studies. Significantly lower PANSS-N score found in tobacco-users in previous studies[23,24] and no significant difference

found in a study by Vatss.[21]

In our study the mean of total PANSS scores was also significantly higher in tobacco user than non-tobacco users (81.18 > 75.14, P Value = 0.007). It suggests that greater severity of illness is associated with greater consumption of tobacco.

Relationship between severity of psychopathology (measured by PANSS) and Nicotine Dependence (measured by FTND scale) among schizophrenic patients showed a significant positive correlation (r = 0.335*) (P value = 0.037). It further supports our results of greater severity of illness is associated with high nicotine dependence.

Similar findings observed in a study by Vatss et al;[21] schizophrenic patients who consumed tobacco had significantly higher positive symptom scores compared with non-users (P = 0.043). Different findings observed in Dickerson et al[25] study; they did not find a statistically significant association between smoking status and symptom severity as measured by the PANSS total score. Results of previous studies are mixed on this topic.[15,26-32] There was very few data available regarding detailed description about pattern of tobacco consumption among schizophrenic patients in previous literature.

Limitations

It was cross sectional hospital based study so findings cannot be generalized. Follow up study need to be conducted. Nicotine/metabolite levels were not objectively measured. Medication and duration of treatment was not considered while comparing psychopathology among schizophrenic tobacco-users.

Conclusions

Our study demonstrated that there is high rate of tobacco use among schizophrenia. It suggests that majority of tobacco-users were male by gender, Hindu by religion, married, belonging to the farmer group who were less educated and having a low socio-economic background.

The pattern of tobacco use showed that most of patients started tobacco consumption before illness, and were daily users, had no sufficient previous successful attempts for abstinence, and had poor motivation for abstinence. Subjects had history of earlier onset and longer total duration of tobacco-use than compare to onset and duration of schizophrenia illness. The tobacco consumption was found to be further increase after onset of illness.

Majority number of patients had moderate dependence for nicotine. Results showed that greater severity of illness is associated with greater consumption of tobacco as well as high nicotine dependence for schizophrenia illness.

Implications

Use of tobacco product by schizophrenic patients is major dilemma for psychiatry. Although well known adverse consequence of tobacco use; clinicians often feel uncomfortable addressing tobacco use practices among patients.[23] Treating tobacco-use habit is difficult due to cognitive, motivation and social impairment in schizophrenic patients. Thus, they need preventive and rehabilitative plan with constant supervision, support and motivating programs for tobacco-abuse treatment to reduce the risks of tobacco- use in the therapeutic plan of each patient.

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Original Article

A Prospective study of the extent of coverage of women mental health issues in newspapers in New Delhi, India

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ABSTRACT

Background: *Newspapers are an important source of information even in this era of internet and other electronic media. Psychiatric illnesses are overshadowed with a lot of stigma and misbeliefs and more up so in case of women. Many studies have shown the media ability to shape public perception of mental illness. Hence it is crucial and in fact necessary to know what this media reports of women mental illnesses.* ***Objectives:*** *The present study was done to find out the extent of coverage of issues related to women mental health in newspapers over a four week period in a prospective study.* ***Methods:*** *All matter related to women mental health were searched manually in four leading newspapers of the Delhi region over a four week period extending from September1, 2015 to September30, 2015. The four newspapers that were analyzed included, Dainik Bhaskar, Dainik Jagran, The Times of India (TOI), and The Hindu.* ***Results:*** *Out of the 181 newspaper cuttings identified during the study period, most belonged to Hindi newspaper Dainik Bhaskar i.e. 28.7%,Dainik Jagran i.e. 25.4% followed by the English newspapers, The Times of India i.e. 24.3% and The Hindu i.e. 21.5 %.* ***Conclusion****: Newspaper coverage mirrors existing reality and social concerns. It is important to sensitize both the print media as well as mental health professionals to the nature of coverage of issues related especially to women mental health. This could form the basis of a new relationship between the two which is more open, frequent and objective.*

Keywords*: Newspaper, women mental health, coverage.*

Introduction

Newspapers are an important source of information even in this era of internet and other electronic media. Psychiatric illnesses are overshadowed with a lot of stigma and misbeliefs and more so in case of psychiatric illnesses in women. Many studies have shown the media's ability to shape public perception of mental illness.[1] Various studies have demonstrated that this information is many a times negative and contributes to stigmatization of people with mental illness.[2] The lack of awareness among people about women mental health is contributed greatly by negligible coverage about it in newspapers especially in a country like India where newspapers cater a great deal in providing information. Hence it is crucial and in fact necessary to know what this media reports of women mental illnesses.

Aim

The aim of the present study was to find out the extent of coverage of issues related to women mental health in newspapers over a four week period in a prospective study.

Methods

All matter related to women mental health were searched manually in four leading newspapers of the region over a four week period extending from September1, 2015 to September30, 2015. The process of search was carried out by a team of three psychiatrists. The four newspapers that were analyzed included, Dainik Bhaskar, the leading Hindi language with an average daily circulation of 3.557 million, Dainik Jagran, Hindi language daily with an average circulation of 3.034million,The Times of India (TOI), the leading English language daily with an average circulation of 2.890 million and The Hindu, English language daily with an average circulation of 1.314 million.[3,4]

Results

Out of the 181 newspaper cuttings identified on women mental health during the study period, most belonged to Hindi newspaper Dainik Bhaskar i.e. 28.7%, Dainik Jagran i.e. 25.4% followed by the English newspapers, The Times of India i.e. 24.3% and The Hindu i.e. 21.5 % (Table 1).

Table 1. Distribution of clippings in the newspapers (n=181)

DainikBhaskar	52 (28.7%)
Dainikjagran	46 (25.4%)
The Times Of India	44 (24.3%)
The Hindu	39 (21.5%)

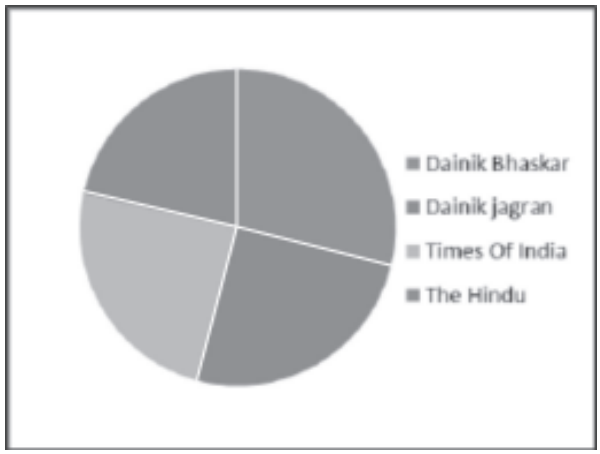

Figure 1. Distribution of clippings in the newspapers (n = 181)

Table 2. Overview of themes featured in clippings

	Dainik Bhaskar (n = 52) (%)	Dainik Jagran (n = 46) (%)	The Times of India (n = 44) (%)	The Hindu (n = 39) (%)
Rape	16 (30.7)	11 (23.9)	13 (29.5)	11 (28.2)
I.P.V.	15 (28.8)	13 (28.2)	9 (20.4)	10 (25.6)
Substance use disorders	6 (11.5)	7 (15.2)	10 (22.7)	6 (15.3)
Suicide	9 (17.3)	8 (17.3)	10 (22.7)	6 (15.3)
Psychosis	1 (1.92)	1 (2.17)	0 (0)	1 (2.56)
Mood disorders	4 (7.6)	5 (10.8)	5 (11.3)	5 (12.8)
Eating Disorders	1 (1.92)	1(2.17)	1 (2.27)	0 (0)

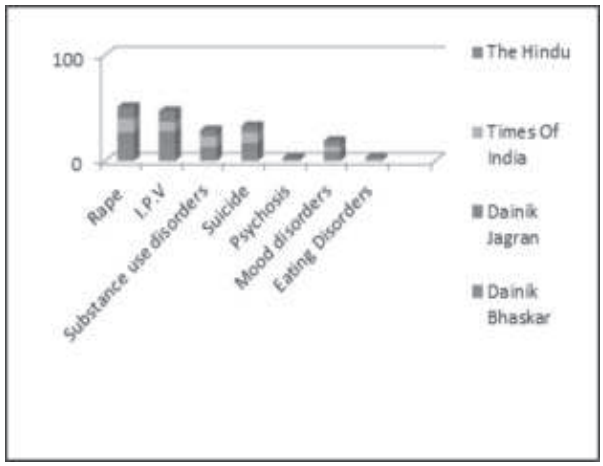

Figure 2. Overview of themes featured in clippings

Among themes, Rape and Intimate Partner Violence (I.P.V) were the commonest, seen in total of 59.5% of Dainik Bhasker clippings, 52.1% of Dainik Jagran clippings, 49.9% of The Times of India clippings and 43.8% of The Hindu clippings.

Substance use disorders and suicide were among the next most commonly found issues with some clippings describing the increasing use of especially alcohol amongst women.

Table 3 shows the role of a mental health professional in the coverage of issues related to mental health. There was only one article featured in DainikBhaskar written by a Psychiatrist and only one article quoted in The Times of India by a

Table 3. Role of a mental health professional in the coverage of issues related to women mental health

	Dainik Bhaskar	Dainik Jagran	The Times of India	The Hindu
Written by a psychiatrist or by a mental health professional	1	0	0	0
Quoted by a mental healthprofessional	0	0	1	0
Information given by a non-mentalhealth professional	2	1	1	1

psychiatrist. This is surprising and points to an urgent need of having psychiatrists or other mental health professionals on the consultant panels of all newspapers so that the coverage of mental health problems is more balanced and based on scientific facts.

Discussion

Newspapers are one of the most accessible sources of information regarding mental health available to public. Studies have shown that this information is frequently negative and contributes to the stigma that is associated with mental illnesses. Newspapers have limited space, and, since there are no reserved slots on news pages, articles about mental health compete with other stories.

There is a need to make the journalists in our country more aware and to sensitize them about the mental health problems especially of women prevalent in our society.

We could not find any study covering women mental health in print media, though we could find various studies discussing about coverage of mental health in print media.[5,6] Rape and Intimate Partner Violence (I.P.V.) were the commonest themes we encountered. There was only one article written by a Psychiatrist and only one article quoted a psychiatrist.

We could not find an Indian study similar to ours despite extensive search.

Conclusion

Newspaper coverage mirrors existing reality and social concerns. Their content is also determined by the demand for a 'good story' which can help to increase the sale of newspapers.

Psychiatrists will not be able to correct the stigma of our specialty and the patients by simply complaining about it. We must, therefore, attempt to work more closely with the media in providing factual information about psychiatric illness especially concerning women and stressing positive aspects such as advances in psychiatric treatment.

It is important to sensitize both the print media as well as mental health professionals to the nature of coverage of issues related especially to women mental health.

This could form the basis of a new relationship between the two which is more open, frequent and objective.

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Original Article

Higher Pathological Impulsiveness & Non-Planning Impulsiveness among Homicidal Psychiatry Inpatients

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ABSTRACT

Background and Aims*: Impulsivity (or impulsiveness) is a multifactorial construct of human personality. Normal human beings are impulsive to various extents, whereas in various psychiatric disorders, changes in impulsivity are a characteristic component. Out of impulsiveness, many persons do serious acts, like homicide. We at LGBRIMH Tezpur aimed at comparing nature of impulsiveness among homicide perpetrators and normal population.* ***Methodology****: At LGBRIMH Tezpur, we evaluated 30 patients with history of homicidal behavior, from LGBRIMH inpatient ward. We had then taken a sample of 30 healthy volunteers from outside. Finally, we compared socio-demographic datasheets and BIS-11 questionnaires of the 2 groups.* ***Results****: The significant finding of this BIS-11 scores comparison is that- 1) Higher level of 'pathological impulsivity' among homicidal psychiatry inpatients group, & 2) Significantly higher non-planning Impulsiveness among homicidal psychiatry inpatients group.* ***Conclusion****: Impulsivity is a common trait of human behavior. Various brain regions or personality traits are associated with various levels of impulsiveness. In this study, our interesting finding is significantly higher non-planning Impulsiveness among homicidal inpatients group.*

Key-words: *Impulsivity, Barratt Impulsiveness Scale, Attentional Impulsiveness, Motor Impulsiveness, Non-planning Impulsiveness, homicide.*

Introduction

Impulsivity (or impulsiveness) is a multifactorial construct of human personality. Normal human beings are impulsive to various extent, whereas in various disorders, changes in impulsivity is a characteristic component like in ADHD, substance use disorders, bipolar disorder, antisocial personality disorder, borderline personality disorder etc.[1] In various psychotic disorders, personality disorderS or other mental disorders people commit various crimes out of impulse. The Barratt Impulsiveness Scale (BIS-11; Patton et al., 1995)[2] is a questionnaire designed to assess the personality/behavioral construct of impulsiveness.

Methodology

We evaluated 30 patients with history of homicidal behavior, from LGBRIMH inpatient ward. We applied Barratt Impulsiveness Scale-11 on them to find out their level of impulsivity. Thereafter, we took a sample of 30 healthy volunteers from outside. Their socio-demographic data were collected and BIS-11 was applied on them. Finally, we compared socio-demographic datasheets and BIS-11 questionnaires of the 2 groups. We finally discussed the important findings of the comparison. Data were then analyzed using SPSS version 20.

Results

Comparing socio-demographic datasheets of the 2

groups, we get the following results.

Comparing the two socio-demographic datasheets, it was seen that there was significant sex difference between the 2 groups. There were 28 males and only 2 females in the homicidal inpatient group whereas, in the healthy volunteers

Table-1: Socio-Demographic & Clinical Profile of Homicidal Psychiatry Inpatients

Age	Up to 45 years	23/30	76.7%
	More than 45 years	7/30	23.3%
Sex	Male	28/30	93.3%
	Female	2/30	6.7%
Marital Status	Married	17/30	56.7%
	Unmarried	10/30	33.3%
	Separated	3/30	10%
Occupation	Yes	22/30	73.3%
	No	8/30	26.7%
Education	Yes	29/30	96.7%
	No	1/30	3.3%
Income	>10,000 INR	23/30	76.7%
	<10,000 INR	7/30	23.3%
Religion	Hindu	21/30	70%
	Muslim	6/30	20%
	Christian	3/30	10%
	Others	—	—
Domicile	Urban	2/30	6.7%
	Rural	28/30	93.3%
Mother Tongue	Assamese	14/30	46.7%
	Hindi	1/30	3.3%
	Bengali	7/30	23.3%
	Others	8/30	26.7%
Primary Clinical Diagnosis	Psychosis	24/30	80%
	Mood Disorder	2/30	6.7%
	Anxiety Disorder	1/30	3.3%
	Personality Disorder	1/30	3.3%
	Others	2/30	6.7%

Table-2: Socio-Demographic Profile of 30 Healthy Volunteers

Age	Up to 45 years	21/30	70%
	More than 45 years	9/30	30%
Sex	Male	17/30	56.7%
	Female	13/30	43.3%
Marital Status	Married	25/30	83.3%
	Unmarried	5/30	16.7%
	Separated	—	—
Occupation	Yes	22/30	73.3%
	No	8/30	26.7%
Education	Yes	30/30	100%
	No	—	—
Income	>10,000 INR	29/30	96.7%
	<10,000 INR	1/30	3.3%
Religion	Hindu	27/30	90%
	Muslim	3/30	10%
	Christian	—	—
	Others	—	—
Domicile	Urban	25/30	83.3%
	Rural	5/30	16.7%
Mother Tongue	Assamese	26/30	86.7%
	Hindi	1/30	3.3%
	Bengali	1/30	3.3%
	Others	2/30	6.7%

group, there are 17 males and 13 females.

Another difference lies in the domicile. 28 persons in the homicidal inpatient group are from rural background, whereas in the healthy volunteers group 25 persons are from urban background.

Finally, everyone in the homicidal inpatient group had a psychiatric diagnosis whereas, none in the healthy volunteers group, had similar diagnosis.

We are not sure, how much these group differences affects impulsivity level that we are going to compare between these groups.

Comparing BIS-11, homicidal psychiatry inpatients group scored more in total BIS-11 score. 53.3% of the group scored more than or equal to 70 on BIS-11 total score meaning 'pathological impulsivity', whereas, in the healthy volunteers group, only 20% members fall in the range of 'pathological impulsivity'.

Attentional Impulsiveness is slightly higher in the healthy volunteer group, whereas Motor Impulsiveness is almost comparable between groups. Non-planning Impulsiveness however was significantly higher i.e. 93.3% among homicidal psychiatry inpatients group. Among the healthy volunteers group it was only 56.7%.

Table-3: BIS-11 scores on homicidal psychiatry inpatients

BIS-11 Total Score	Less than 70	14/30	46.7%
	Equal to or more than 70	16/30	53.3%
Attentional Impulsiveness	0-16	12/30	40%
	17-32	18/30	60%
Motor Impulsiveness	0-22	13/30	43.3%
	23-44	17/30	56.7%
Non-planning Impulsiveness	0-22	2/30	6.7%
	23-44	**28/30**	**93.3%**

Table-4: BIS-11 scores on 30 healthy volunteers

BIS-11 Total Score	Less than 70	24/30	80%
	Equal to or more than 70	6/30	20%
Attentional Impulsiveness	0-16	9/30	30%
	17-32	21/30	70%
Motor Impulsiveness	0-22	12/30	40%
	23-44	18/30	60%
Non-planning Impulsiveness	0-22	13/30	43.3%
	23-44	17/30	56.7%

Discussion

The significant finding of this BIS-11 scores comparison is that- 1) Higher level of 'pathological impulsivity' among homicidal psychiatry inpatients group, and 2) Significantly higher non-planning Impulsiveness among homicidal psychiatry inpatients group.

Non-Planning Impulsiveness involves 2 first order factors namely 'Self-Control' and 'Cognitive Complexity.' It assesses careful thinking and planning and enjoyment of challenging mental tasks. Non-planning impulsivity correlates positively with the left orbitofrontal cortex and lateral frontopolar cortex.[3]

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Original Article

Relationship between Quality of life, Sociodemographic Factors and Illness Characteristic in Schizophrenia

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ABSTRACT

Introduction: *The quality of life (QoL) concept is a very essential part of health management and healthcare planning. Improving quality of life (QoL) is an important objective in the treatment of schizophrenia.* ***Aims:*** *The main purpose of this study was to examine relationship between socio-demographic factors, illness characteristics and quality of life in patients of Schizophrenia* ***Setting and Design:*** *Cross-sectional study carried out in outdoor patients attending Psychiatry Department of a tertiary care hospital situated in Jaipur, India.* ***Material and Methods:*** *The study group consisted of 50 consecutive patients diagnosed with Schizophrenia and with minimum duration of illness being 2 years, who were living in community and taking regular maintenance treatment. Patients fulfilling the inclusion criteria were registered and evaluated using appropriate scales like PANSS, CGI, GAF, and WHO QoL-Bref version. The data collected was analyzed using appropriate statistics.* ***Result and Conclusion:*** *While exploring relationship between quality of life and various socio-demographic variables, our findings suggest that socio-demographic factors are related to subjective quality of life in only few selective domains and that too in a non-conclusive way. We could not find any significant relationship between age, gender, domicile, education, marital status and family type of patients with their QoL. Regarding income, patients having a higher family income reported higher scores in health and environmental domain of WHO Qol Bref version. No significant relationship was observed between onset of illness, duration of illness and quality of life.*

Keywords: *Schizophrenia, Sociodemographic factor, illness characteristic, Quality of Life.*

Introduction

The quality of life (QoL) concept is a very essential part of health management and healthcare planning[1] and improving quality of life (QoL) is an important objective in the treatment of schizophrenia.[2] Various studies in the past have studied the relationship between sociodemographic factors and subjective measures of quality of life and several of these studies have focused on variables like age, gender, education, occupation, marital status, domicile, age of onset, duration of illness etc.[3-6] Various studies have found correlation between subjective quality of life and some socio-demographic variables.[7,8] In contrast to above, in several other similar studies, none of the selected demographic variables (i.e. age, sex, marital status, education, and employment) were observed to be associated significantly with any of the quality of life measures.[9-13] A better understanding of these relationships could lead to improvements in the management of patients with schizophrenia.[14] With this aim in mind we conducted this study to assess the relationship between quality of life, various sociodemographic factors and illness characteristics of patients with

schizophrenia.

Aims and Objectives

The main aim of this study was to assess relationship between subjective quality of life in Schizophrenia, sociodemographic factors and illness characteristics. The study was designed to fulfill the following objectives

- To examine the relationship between socio-demographic factors, illness characteristics and quality of life in Schizophrenia and how they affect each other.

Material and methods

The study was conducted at Psychiatry OPD of a tertiary care hospital situated in Jaipur, India. 50 consecutive subjects fulfilling the specified inclusion criteria were enrolled in the study.

Study Group:

The study group consisted of 50 consecutive patients with schizophrenia attending psychiatry OPD with minimum duration of illness being 2 years, and who were taking regular maintenance treatment.

Inclusion criteria:

- Age: 18 to 60 years
- Diagnosis of Schizophrenia according to ICD – 10 criteria.

Exclusion criteria

- Patients with medical or neurological illness
- History of head trauma.
- Mental retardation
- Patient meeting ICD-10 criteria for drug dependence.
- History of indoor admission in past three months prior to assessment.
- Duration of illness less than two years.
- Patient who refused to participate.

Study Design (Operational Procedure)

Patients fulfilling the inclusion criteria were taken up for the study. These cases were enrolled after taking informed consent from them to be included in the study. After detailed history and mental status evaluation a diagnosis of Schizophrenia was confirmed by two senior consultant psychiatrists according to ICD-10 criteria. Then these patients were evaluated clinically. The patient's socio-demographic data and illness history were obtained.

Following this, psycho pathology, illness severity, level of functioning and quality of life was assessed using appropriate rating scales.

Ethical Issues

Informed consent was obtained from each patient and their caregiver prior to inclusion into the study. All were explained regarding the nature and the rationale of the study. The subjects had the right to withdraw from the study at any point of time.

Instruments of study

1. Self-designed semi-structured Performa was used. It included the following:
   (a) Socio-demographic data sheet.
   (b) Clinical profile sheet.
2. **Positive and Negative Symptom Scale (PANSS)[15]:** The PANSS includes 30 items on three sub scales, seven items covering positive symptoms (e.g. hallucinations and delusions), seven covering negative symptoms (e.g. blunted effect) and 16 covering general psychopathology (e.g. guilt, uncooperativeness). Each item is scored from one to seven points. The positive and negative subscales each range from 7 to 49 and general psychopathology scale ranges from 16 to 112. The rating can be completed in 30 to 40 minutes.
3. **Global Assessment of Functioning (GAF)[16]:** It is a 100-point single item scale with values ranging from 1 to 100 representing the hypothetically sickest person to the healthiest. The scale is divided into 10 equal 10-point intervals with the 81 to 90 and 91-100 intervals for individuals who exhibit superior functioning. The 71 to 80 intervals are for person with minimal psychopathology. Most patient in outpatient setting will receive ratings between 31 and 70, and most inpatients between 1and 40.
4. **Clinical Global Impression (CGI)[17]:** The CGI is a three-item scale, which measures overall severity of illness. If repeated, it can evaluate response to treatment. The CGI is rated by the patient's physician or a trained

rater who evaluates severity of illness, clinical progress, and therapeutic efficacy. Raters are asked to evaluate the severity of patient's illness based on the rater's total experience with the specific patient population to which the patient belongs. In clinical and research situations, only the first two items – severity of illness and global improvement – are utilized. Severity of illness is rated on a seven-point spectrum (1- normal, 7 - among the most severely ill patient). For the present study we have used its first item "Severity of illness" to assess patients illness severity.

5. **WHOQOL-BREF**[18]**:** this is a 26 item self administered generic questionnaire, a short version of the WHO QoL-100 scale. It emphasizes the subjective experience rather than the objective conditions It is made up of domain or facets (sub domain). It includes four domain scores (Physical, Psychological, Social and environmental) and two individually scored items measuring the individual's overall perception of their quality of life and satisfaction with their physical health. All items are rated on a five-point Likert Scale. Domain scores range from 0 to 100, where as the individual items have a score range 1-5. In all cases, higher scores reflect better quality of life. For the purpose of present study WHOQoL-BREF, Hindi version was used. All the findings of the study were compiled and suitable statistics was applied and results were drawn and discussed.

Statistical Analysis

Statistical analysis of the data was carried out using SPSS software version 17. Mean and standard deviation were presented for all the continuous variables, and χ^2 test was performed to test association of categorical variables. The relationship between variables was studied using t-test, ANOVA and Pearson's correlation coefficient in SPSS 17 version. P value less than 0.05 was considered as statistically significant.

Results

Tables 1 and 2 show socio-demographic and clinical characteristics of the study group. Study group consisted of 35 males and 15 female patients with a mean age of 38.6 years. Approximately 48% of the patients in this study were working, 56% were from urban background, 68% were married and 62% were living in joint family. 50% of patients were having family income below 3000 Rupees per month.

Majority of patients (72%) had an onset of illness before the age of 30 years, 36% of patients had total duration of illness of more than 10 years, 28% of patients had duration of illness in the range of 5-10 years and remaining 36% had duration of illness below 5 years [Table 1].

Scores on the PANSS ranged from 7 to 29 on the positive scale (M = 13.70, S.D. = 5.32), 8 to 29

Tables-1: Distribution of Sociodemographic and clinical profile of study group

Variable	Schizophrenia (n = 50, f %)
Age in (years) – mean (SD)	38.62 (10.75)
Sex	
Male	35 (70)
Female	15 (30)
Marital status	
Married	34 (68)
Unmarried (Single)	10 (20)
Separated, widower, and divorced	6 (12)
Domicile	
Rural	22 (44)
Urban	28 (56)
Education	
Illiterate	11
Below Higher secondary	15
Higher secondary and above	24
Occupation	
Working	24 (48)
Nonworking	13 (26)
Housewives	13 (26)
Family Income in Rupees / month	
< 3000	25 (50)
3000-10000	16 (32)
> 100001	9 (18)
Family type	
Joint	31 (62)
Nuclear	19 (38)
Age of Onset (Years)	
≤ 20	08 (16)
21-30	28 (56)
≥ 30	14 (28)
Duration of Illness (Years)	
< 5	18 (36)
5-10	14 (28)
> 10	18 (36)

on the negative scale (M = 14.56, S.D. = 6.27) and 18 to 54 on the general psychopathology scale (M = 29.74, S.D. = 7.17). The GAF mean score was 65.56, in our study, while the mean illness severity score as assessed from CGI- scale was 3.02 (S.D= 1.39)

Table-2: Clinical characteristic of study group

Variable	Schizophrenia n = 50, mean (SD)
PANSS	
Positive	13.70 (5.30)
Negative	14.56 (6.27)
General Psychopathology	29.74 (7.17)
GAF	65.56 (17.76)
CGI	3.02 (1.39)

(Table 2).

Table 3 shows the relationship between various Sociodemographic factors and illness characteristics with Quality of Life in study group. With regard to effect of age of patients with schizophrenia on their quality of life, no association could be noted between the two variables. No significant relationship was observed between Quality of Life and patients with schizophrenia domicile, education, marital status, and family type. Housewives and patients who were working reported higher psychological wellbeing. Patients having higher family income scored significantly higher than the other two groups on health and environmental domain. These patients also reported better overall quality of life than the other two groups however the difference was statistically non-significant. No significant relationship could be observed between onset and duration of schizophrenic illness with quality of life.

Discussion

Severe and chronic illness like Schizophrenia[19] can have devastating impact on a patient's life.[20] Quality of life may be defined as a person's sense of wellbeing and satisfaction with his/her life circumstances, as well as a person's health status and access to resources and opportunities.[21]

While exploring relationship of quality of life with various socio-demographic variables some interesting findings were noted. With regard to effect of age of schizophrenic patients on their quality of life, no association could be found between the two variables. Earlier studies in schizophrenic patients also got similar results.[11,13,22-24] On the

Table 3: Relationship between Sociodemographic factors and illness characteristics with Quality of Life in Patients with Schizophrenia

Variable	Overall QoL	Health domain	Physical domain	Psychological domain	Social relationship domain	Environmental domain
Age	r = 0.107 (Sig = .458)	r = 0.043 (Sig = .769)	r = -0.025 (Sig = .866)	r = 0.071 (Sig = .623)	r = 0.022 (Sig = .877)	r = -0.026 (Sig = .856)
Sex	t = -0.977 (Sig = .334)	t = -0.033 (Sig = .974)	t = 0.218 (Sig = .829)	t = -1.60 (Sig = .116))	t = -2.28 (Sig = . 0.027*)	t = -0.554 (Sig = .582
Domicile	t = 0.537 (Sig = .594)	t = -0.456 (Sig = .650)	t = -0.857 (Sig = .395)	t = -0.571 (Sig = .570)	t = -1.54 (Sig = .128)	t = -0.84 (Sig = .934)
Family type	t = 1.109 (Sig = .273)	t = 1.459 (Sig = .153)	t = 1.853 (Sig = .070)	t = 1.090 (Sig = .281)	t = 0.548 (Sig = .586	t = 0.881 (Sig = .383
Education	f = 0.876 (Sig = .423)	f = 0.731 (Sig = .487)	f = 0.751 (Sig = .478)	f = 0.578 (Sig = .565)	f = 0.339 (Sig = .714)	f = 0.164 (Sig = .849)
Occupation	f = 1.809 (Sig = .175)	f = 0.420 (Sig = .660)	f = 0.008 (Sig = .992)	f = 4.878 (Sig = 0.012*)	f = 2.347 (Sig = .107)	f = 0.395 (Sig = .676)
Marital Status	f = 1.235 (Sig = .300)	f = .992 (Sig = .379)	f = .532 (Sig = .591)	f = 1.992 (Sig = .148)	f = 2.005 (Sig = .175)	f = .175 (Sig = .840)
Income	f = 2.700 (Sig = .078)	f = 4.379 (Sig = 0.018*)	f = 1.513 (Sig = .231)	f = .488 (Sig = .617)	f = .928 (Sig = .403)	f = 3.589 (Sig = 0.035*)
Onset of illness	f = 1.491 (Sig = .236)	f = 1.509 (Sig = .232)	f = .237 (Sig = .790)	f = 2.040 (Sig = .141)	f = .883 (Sig = .420)	f = 1.449 (Sig = .245)
Duration of Illness	f = 2.157 (Sig = .127)	f = .837 (Sig = .439)	f = 1.7221 (Sig = .190)	f = .633 (Sig = .536)	f = 1.358 (Sig = .267)	f = .187 (Sig = .830)

Pearson product moment (r), t test (t), ANOVA(f); *P < .05, ** P < .01

contrary, few studies reported significant relationship between patient's age and their quality of life.[8,25,26] In this study, gender had little influence on subjective perception of overall quality of life which is in accordance with few other studies,[7,11,26] however female patients reported higher scores in the social relationship domain as compared to their male counterparts. Few other authors also reported better social role functioning of female patients in their study as compared to male patients.[27,28] In contrast few other studies reported lower quality of life in female patients as compared to male patients in their study.[23,24]

We could not find any relationship between domicile, education, marital status and family type with quality of life in patients similar to other studies,[9,13,29,30] however few other studies found relationship between quality of life with educational status of patients,[25,31] and association of lower quality of life with low schooling and single marital status.[26,28]

No statistically significant relationship was observed between overall quality of life and occupational status of patients as also reported by other studies,[9,28] however, patients with a job scored significantly higher than unemployed patients on psychological domain. Interestingly housewives reported better quality of life in this domain, even better than the working group.

Patients having higher family income scored significantly higher than the other two groups on health and environmental domain. Patients in this group also reported better overall quality of life than the other two groups, however the difference was statistically non-significant. Our findings partly match with those of other studies[28,32] which also report significant association between income and Quality of life. In contrast to our findings, other authors could not found any relation between quality of life of patients and income in their studies.[7,9,25,30]

In general, the demographic characteristic used, explained only a relatively small part of variance in quality of life. Our findings suggest that socio-demographic factors are related to subjective quality of life in particular domains and that too in a non-conclusive way. These findings are in accordance with findings of other authors[30,33] and are partially in line with that of other studies which observed significant relationship between only few socio-demographic variables and quality of life in patients demographic factors & patients of schizophrenia.[9,12,13,34]

With regard to the relationship between age of onset of illness, and total duration of illness with quality of life on analysis, there was no significant relationship noted. Our findings were in conformity with findings of other authors.[7,10,34] but were in contrast to that of one other study which reported correlation between duration of schizophrenic illness with three domains of subjective quality of life (health, leisure, living situation).[35]

Conclusions

Our findings suggest that socio-demographic factors are related to subjective quality of life in patients of schizophrenia in only few selective domains and that too in a non-conclusive way.

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Original Article

Cognitive Behavioural Therapy as an adjunctive therapy for the Mental Health of the people struggling with prolonged Socio-Political unrest

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ABSTRACT

Background: *The psychological sequelae of wars/conflict situations are well documented. Studies have shown that conflict situations cause more mortality and disability than any major disease, and hence calling for an attention to evolve means and methods of integrating various interventions during efforts of societal repair. The 9/11 episode set into motion a number of initiatives to apply cognitive behavioral methods of care for survivors.* ***Aim/Objective:*** *The present study evaluates the efficacy of Cognitive Behavioral Therapy (CBT) as an adjunctive therapy for the Mental health of the people of Kashmir who have been witnessing the traumatic experiences amid ongoing socio-political unrest for the last two and a half decades now, resulting in alarming mental health consequences.* ***Method:*** *A sample of 50 clinically diagnosed patients (Depression and co-morbid conditions) was recruited for the study. Patients continuing SSRI (dosage controlled for the study) were administered 17-20 CBT sessions each.* ***Results:*** *The post test scores clearly indicate that CBT fared well with the patients diagnosed with Major Depression and co-morbid OCD/GAD/Panic, however no significant effect of CBT was seen on the patients diagnosed with co-morbid PTSD.* ***Conclusion:*** *This study thus suggests that CBT as an intervention may be clinically relevant, beneficial and a viable approach in enhancing the mental health of the people struggling with conflict/war like situations.*

Key words: *Socio-Political Conflict, Mental Health Intervention, Cognitive Behavioral Therapy*

Introduction

Wars, socio-political conflicts, terrorism, whatever be the terminology, the dire consequences can be expected not only in terms of social, economic and cultural disturbances but the psychological impact can also be substantial. Deliberating upon the psychological interventions, there has been limited research on the effectiveness of specific interventions for the bruised minds battling with such situations. This paper attempts to evaluate the effectiveness of Cognitive Behavioral Therapy (CBT) as a treatment modality for Depression (including co-morbid conditions) among the people of Kashmir who have been witnessing a plethora of traumatic experiences due to the ongoing socio-political chaos, resulting in mounting psychiatric morbidity.

The prolonged political unrest in Kashmir division of Jammu and Kashmir State (India) has not only disrupted the entire social tissue of the region but it

has snatched the mental peace of every single individual. A significant increase is seen in the number of people being diagnosed with acute stress reaction, depressive disorders, anxiety disorders, and post traumatic stress disorder.[1] Irrespective of gender, mental disorders have shown an alarming increase since 1980s when a yearly average of 1200 to 1400 patients were seeking treatment at the Kashmir's sole psychiatric department. A very recent and comprehensive mental health survey conducted by Medecines Sans Frontiers (MSF), a leading non government organization (NGO) working on mental health issues of the people of Kashmir reports that 1.8 million adults (45% of adult population) suffer from psychological distress amid conflict related traumatic experiences. In this study depression has been found as the most prevalent disorder with 41% adults showing its symptoms and 1 in 5 adults (19%) with significant symptoms of PTSD. The most reported problems faced by the adult population are financial, health and employment issues.[2] This alarming increase in psychiatric morbidity has enormously amplified the mental health care needs of the survivors. Although psychiatrists are significantly contributing in promoting community recovery and minimizing psycho-social disruption among the masses, however, need of the hour is to integrate psychiatric and other psycho-therapeutic interventions for a speedy recovery of the bruised minds.

Material and Methods

Sample and Diagnosis

The present study was conducted at the Institute of Mental Health and Neurosciences (IMHANS) Srinagar. A total of 63 outpatients were evaluated for the study, however, only 50 patients meeting inclusion criteria (age 20-50 years and with co-morbid anxiety disorders) were recruited for the study. After taking detailed history, patients were screened for other psychiatric conditions like bipolar disorder, psychotic features and other medical conditions including cerebral palsy, epilepsy and congenital genetic disorders were excluded.

Measures

Upon receipt of referrals and after taking detailed history from the patients and their relatives, the following outcome measures were administered to the patients in order to assess their symptom severity at the baseline.

Beck Depression Inventory (BDI-II):[3] The BDI-II is a 21-item self report inventory developed by Aaron Beck as an assessment tool to measure the severity of depression. The inventory is an indicator of the presence and degree of depressive symptoms consistent with the DSM-IV.[8]

PGI-Health Questionnaire N-1:[4] Developed by Wig, Verma and Prasad, the questionnaire was used to assess the overall Mental Health (anhedonia) of the patients. The questionnaire consists of 38 items which are divided into two sections: Section-A consists of 16 items related to physical distress and section-B consists of 22 items which are related to psychological distress. There is no cut-off point in this scale, however, if a person ticks more than 10 items, chances are high that the person has got marked neurotic trends.[9]

Procedure

The study was based on a matched group (pre-post) design. Initially the patients underwent a psychiatric and medical evaluation by senior psychiatrists who assessed the patients through Structured Clinical Interview for DSM-IV-TR to confirm psychiatric diagnosis.[5] Most of the patients showed co-morbid conditions with major depression as their principal psychiatric diagnosis. The patients reported a minimal improvement despite taking an adequate SSRI trial for more than 4 months, while remaining moderately ill. The patients were required to have an adequate trial so that they had experienced the maximum benefit from SSRI treatment prior to the study. An adequate SSRI is defined as atleast 12 weeks continuous use of any of the following: 225 mg/day of clomipramine, 60 mg/day of fluoxetine, 60 mg/day of paroxetine, 200 mg/day of sertraline, 250 mg/day of fluvoxamine, 60mg/day of citalopram, or 30 mg/day of ascitalopram which too has been quoted by other therapists and researchers.[7] The dosage was kept stable, without any tapering throughout the study. After random assignment to treatment conditions, patients were scheduled for the pre-treatment assessment with the help of the following measures.

After building rapport with the patients, their socio-demographic details were recorded. The patients were then interviewed on individual basis

and their baseline scores were recorded by administering the above mentioned measures. Concomitant medications were permitted if the dose was stable for at least 4 weeks prior to the study and remained stable throughout the study.[18] Co-morbid diagnosis were permitted if clearly secondary (i.e., the depressive symptoms were both severe and impairing). Treatment history was confirmed by the prescriptions and by prescribing clinician. Patients continuing SSRI treatment were randomly assigned for augmentation with CBT. The patients initially met a psychiatrist for the purpose of maintaining a stable medication regimen & improvement so that changes in clinical conditions could be attributed to CBT. Medication adherence was assessed at each visit by verbal report, pill counts and by confirmation from immediate relations. After the baseline assessment, the patients were administered to 17-20 CBT sessions. The sessions were delivered in assistance with the lone clinical psychologist catering services to the patients for the last 20 years.

The content of sessions was designed to include most common CBT elements, as well as many disorder specific treatment elements. The protocol involved both cognitive and behavioral components in accordance with the nature of the disorder starting from psycho-educational procedure involving efforts to teach the patients to challenge their automatic thoughts, identify cognitive errors and implement more rational thinking style with the help of Socratic Questioning wherein the patients were encouraged to start raising questions about the accuracy and validity of his or her thinking. More techniques included thought recording and examining the evidence that either supports or refutes the automatic thought in an attempt to identify cognitive errors such as overgeneralization, catastrophic thinking, maximizing or minimizing, personalization, and all-or-none thinking.

In addition to the cognitive techniques, the therapist used some behavioral techniques which are based on the premise that depressed people spend excessive amounts of time alone or have tangible reductions of pleasurable activity and that depression is an "extinction state" resulting from the loss of reinforcers.[10] These includes Activity Scheduling, Graded Tasks, Thought Stopping and Distraction and Social Skills Training. Other techniques used for co-morbid symptoms included Breathing Control, Desensitization, Relaxation, Ritual prevention and Flooding.

Data analyses

Once the therapeutic sessions were completed, the collected data was analyzed by using SPSS (Versions-16). The differences in the baseline scores of the three patient groups (i.e., Major Depression, co-morbid OCD/GAD/Panic, co-morbid PTSD) were assessed by comparing the pre-test mean scores on both the measures of Depression and Mental Health. The pre-test and post-test differences on clinical features among the three patient groups were analyzed by using paired *t*-tests to assess changes by virtue of intervention over a period of time. The p-value was set at 0.01 and 0.05 and the effect size was calculated by applying the below mentioned formula.

$$\text{Eta squared} = \frac{t^2}{t^2 + N - 1} \text{ (for paired sample)}$$

To interpret the eta squared values the guidelines given by Cohen were followed (.01 = small effect; .06 = moderate effect; .14 = large effect).[11]

Results and Discussion

Of the 50 patients meeting inclusion criteria, 20(40%) patients were diagnosed with Major Depressive Disorder, 17(34%) with co-morbid OCD/ Panic/GAD disorder and a number of 13(26%) patients received a diagnosis of co-morbid PTSD, accepting the fact that co-morbidity is often the rule and not the exception. The presenting complaints of the sample are given as under.

The qualitative assessment of our sample revealed that almost 75% of the patients had experienced unfavorable circumstances of one kind or the other due to the prevailing conflict situation. Some patients had experienced/witnessed a traumatic event which include, death of a loved one due to conflict related violence, exposure to a potential violent event such as explosions and cross-firings. Some had developed the disorder due to the on again off again fashion of the strikes, resulting in poor socio-economic conditions and bleak future prospects. (Table-1)

The results of this study are likely to have a considerable policy impact regarding accessibility

Table-1: Showing Presenting complaints of the Sample

Presenting Complaints	% age
Somatic symptoms (headache,stomachache, loss of appetite, insomnia and breathlessness)	87
Irritability/outbursts of anger	79
Loss of interest and pleasure	67
Suicidal tendency	35
Episodes of loss of consciousness	18
Constant worrying	16
Intrusive thoughts and related behaviors	12
Panic attacks	06

Table-2: Showing Socio-Demographic Profile of the patients

Age Group	20-34 yr	38%
	35-50 yrs	62%
Gender	Male	44%
	Female	56%
Locale	Rural	68%
	Urban	32%
Marital Status	Married	54%
	Unmarried	42%
	Widow	4%
Education	Literates	60%
	Illiterates	40%

of psychological interventions for people residing in war/conflict zones. Such interventions are in line with the IAPT, policy for Improving Access Psychological Therapies and Inter Agency Standing Committee guidelines on Mental Health and Psychosocial Support in Emergency Settings.[12] The results obtained can be seen in the following table.

The above results (Table 2 & 3), clearly indicate that there is a significant difference in the pre-test and post-test scores of patients diagnosed with Major Depression and Co-morbid OCD/GAD/PANIC on both the measures i.e; Depression and Mental Health at 0.01 level of significance. However, no significant difference was seen in the pre-test and post-test scores of the patients diagnosed with co-morbid PTSD on both the measures. Moreover, the eta-squared statistics indicates a large effect size on both Major Depression and co-morbid OCD/GAD/PANIC patient groups. The failure to have a

Table-3: Comparing Pre-test and Post-test scores of the three patient groups on the measure of Depression (BDI-II)

Group	Condition	Mean	SD	t	Eta-squared
Major Depression	Pre	24.90	5.21	18.71**	0.94
	Post	12.50	4.29		
Co-morbid	Pre	31.98	2.34	22.40**	0.96
OCD/GAD/PANIC	Post	19.58	3.43		
Co-morbid PTSD	Pre	38.07	4.64	1.89	(ns)
	Post	37.84	4.59		

***p < 0.01*

Table-4: Comparing Pre-test and Post-test scores of the three patient groups on the measure of Mental Health (PGI-HQ-N1)

Group	Condition	Mean	SD	t	Eta-squared
Major Depression	Pre	27.85	2.13	26.07**	0.97
	Post	17.25*	2.15		
ComorbidOCD/GAD/PANIC	Pre	30.52	2.87	20.54**	0.96
	Post	19.35*	3.49		
Comorbid PTSD	Pre	36.00	1.68	1.47	(ns)
	Post	35.84	1.57		

**p < 0.01; *low scores indicate good mental health

significant effect of CBT on the patients diagnosed with co-morbid PTSD may be apparently attributed to the fact that the patients diagnosed with co-morbid PTSD probably had more complex symptoms and the equal number of CBT sessions were given to all patient groups, indicating that the number of sessions remained less in order to bring an influential effect of CBT among this patient group. Moreover, the failure to bring a positive change in the thinking pattern of this patient group may also be attributed to the greater degree of psychological distress resulting from the direct exposure to the life threatening events, death of a close family member or losing of an asset (e.g.; house, shop etc) that made their lives more miserable as found in our qualitative analysis of the sample. This finding is in line with the results of other studies highlighting that people who lived in exposed areas had higher distress levels.[13,14] Study conducted by Silver and Colleagues on nationwide psychological responses to the 9/11 episode in New York also found that people directly exposed to the event had significantly higher PTSD symptoms than those indirectly exposed to the event.[15]

Thus the findings of the study clearly indicate that CBT has shown a significant effect in reducing depression besides enhancing Mental Health of the people of Kashmir, struggling for the mental equilibrium due to the ongoing conflict. Since Kashmiri people own a centuries old cultural heritage of Sufism (Shrine believers) which too contains the restructuring of beliefs. It is due to this reason that certain religious teachings/citations were also included in the therapy. This logic finds support in the research carried out by Propst and colleagues who also found that incorporating religion into therapy when working with a group of Christian people with depression resulted in greater improvement than when religion was not incorporated into the therapy.[16]

Hence there is a dire need to make efforts for a well-framed policy and it is the responsibility of the policy makers to provide a platform to the psychotherapists and psychologists, so that they can render their services to the wounded minds which in turn will help to upgrade the Mental Health of the people of Kashmir and involve them in the mainstream of the Society. The intervention programme (CBT) as well as this study requires replication in other ongoing/post conflict contexts.

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Original Article

Personality and Family Environment of Patients with Schizophrenia

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ABSTRACT

Background: *Everyone holds a unique personality and because of this uniqueness, every individual behaves differently in different situations. These individual differences become the basis of personality. Similarly different personalities adjust themselves differently in different life situations.* ***Objective:*** *This study was carried out to identify the personality factors and family environment of patients with schizophrenia in comparison to normal healthy control and to explore the relationship between personality factors and family environment of schizophrenia group.* ***Method:*** *The research approach adopted here was field study. Purposive sampling technique has been employed. A total of 70 participants were selected out of which 35 were patients with schizophrenia and other 35 were normal healthy controls. The tools used for data collection were 16 P.F. (Form B) and Family Environment Scale. t-test and correlation were used as statistical technique to analyze the data.* ***Results:*** *The result findings so obtained revealed that there was statistically significant difference between the personalities of patients with schizophrenia and normal healthy control. Similarly, patients suffering from schizophrenia have poor family environment compared to that of control group. There was inter-relationship between the personality factor and family environment on certain factors such as Warmth, Intelligence, Ego-Strength, Impulsivity, Conformity, Boldness, Sensitivity, Suspiciousness, Shrewdness, Insecurity, Self-Sufficient, Self-Disciplined, Tension.* ***Conclusions:*** *On the basis of research finding, it can be concluded that personality traits and family environment affect symptoms and social functioning in person with schizophrenia.*

Keywords: *Schizophrenic Patients, Personality Factors, Family Environment.*

Introduction

Schizophrenia is characterised, in general, by the fundamental and characteristic distortions of thinking and perception, and affects that are inappropriate or blunted. Clear consciousness and intellectual capacity are usually maintained although certain cognitive deficits may evolve during time. The most important psychopathological phenomena include thought echo; thought insertion or withdrawal; thought broadcasting; delusional perception and delusions of control; influence or passivity; hallucinatory voices commenting or discussing the patient in the third person; thought disorders and negative symptoms.[1]

A sudden change in personality and behaviour, which occur when schizophrenia sufferers lose touch with reality is called psychotic episode. Schizophrenia varies in severity from person to person. Some people have only one psychotic episode while others have many episodes during a lifetime but lead relatively normal lives between episodes. Still other individuals with this disorder may experience decline in their functioning over time with little improvement between full-blown psychotic episodes.

Personality is considered as an important aspect of schizophrenia, it may influence symptom expressions, a patients' insight, neurocognitive functioning, social functioning, and self-reported quality of life,[2-4] and some pre-morbid personality traits may be related to an earlier presentation of disease.[5,6]

Family is a basic unit that is responsible in preserving the integrity of individuals, who form the unit. Family extends to emotional, social, and economic support to their members. A high functioning family helps in maintaining the dimensions of communication, emotional and behaviour control, and also helps in problem-solving and coping behaviours of its members. An illness like schizophrenia is serious and disabling and causes an emotional and financial brunt on the supporting family members.

The research findings suggest that chronicity adversely affects patients' family.[7] Schizophrenia is stressful for both the patient and their family, studies show that between 50% and 80% of patients with this disorder either live with their family or are regularly in touch with their family members.[8] Indian families experience significant degrees of burden in the care of their relatives with OCD and schizophrenia. Illness severity and patients' disability had a direct positive relationship with perceived family burden.[9] Examining the specific educational needs of these families can have a major effect on their knowledge and attitude, and consequently, on the way they care for and interact with these patients, and ultimately lead to an improved quality of life for the patients and their families.[10]

Based on the review of literature, it was found that there was a significant difference between the personality of schizophrenia group and normal group, in the same way there was also a significant difference between the perception of family environment of patients suffering from schizophrenia and apparently normal healthy control. But no relation was found between personality types and perception of family environment in the light of previous work done in this regard. The present research revalidates the previous studies and finds the relationship between personality and perception of family environment among schizophrenia group.

Objectives

The purpose of the study was to:

1. Assess the personality traits of schizophrenia group.
2. Measure the perception of family environment of patients suffering from schizophrenia.
3. Investigate the relationship between personality and family environment of patients with schizophrenia.

Hypotheses

Ho1: There will be no significant difference between the personality of schizophrenia patients and normal healthy individuals.

Ho2: There will be no significant difference between perception of family environment of schizophrenia patients and normal healthy group.

Ho3: There will be no association between personality and family environment of schizophrenia group.

Method

Variables

The present research is a field study in which personality and family environment of patients with schizophrenia and normal healthy control were assessed. Independent variable was mental health status i.e. people with schizophrenia and normal healthy people and dependent variables were personality traits and family environment.

Sample

In the present research, purposive sampling technique (for schizophrenia group) and random sampling technique (for control group) was employed. Total numbers of participants included in the study were 70, out of which 35 were patients with schizophrenia and other 35 were normal healthy people. The sample for schizophrenia group was collected from the IPD, Department of Psychiatry, Mathura Das Mathur Hospital, Jodhpur based on the diagnostic criteria of DSM-IV-TR. The sample for normal healthy control group was selected after being asked some demographic questions including their age, gender, educational status and required to answer questions "Do you like being lonely?", "Do you think you can't trust people?", "Do you often feel restless and worried?" in order to ascertain their mental health status . The participants of both the groups were within the age-range of 25-45 years

and their minimum educational status was 8th grade.

Tools

The tools used for gathering the relevant data were:

1. **16 P.F.[11]:** 16 P.F. (Form-B) also known as 16 Personality Factor was originally developed by Cattell (1949) whose Hindi adaptation was prepared by S.D. Kapoor (1970). It is widely used forced-choice test which is available in five separate forms. Each form consists of declarative stems that force the tester to respond to a specific situation by choosing from among two or three forced-choice options. It yields 16 scores separately on 16 traits of personality, each of which is bipolar. Short-term test-retest reliability coefficient for the 16 source traits range from .65 to .93 with a median coefficient of .83.
2. **Family Environment Scale[12]:** Family environment is measured using Family Environment Scale whose Hindi adaptation prepared by Joshi and Vyas of Moose and Moose (1987). The scale is a 90-item inventory that has 10 subscales measuring interpersonal relationship dimension, personal growth and system maintenance. The Relationship dimension includes measurements of Cohesion, Expressiveness and Conflict. The Personal Growth dimension includes measurements of Independence, Achievement Orientation, Intellectual Cultural Orientation and Moral Religious Emphasis. The System Maintenance dimension includes measurements of Organization and Control. The reliability was measured using internal consistency which varies between 0.622-0.89. The validity was measured using convergent and divergent validity, factorial and predictive validity which were found to be high.

Results

Table 1 shows comparison of personality factors between schizophrenia group and normal healthy control group. On Intelligence factor, highly significant difference was found among patients with schizophrenia (M=4.03, SD=2.203) and normal healthy individuals (M=6.26, SD=1.597); $t_{(68)}$ =4.846. There was statistically significant difference on Ego-Strength factor between patients suffering from schizophrenia (M=3.51, SD=1.011) and normal healthy people (M=4.66, SD=1.327); $t_{(68)}$ =4.053. The factor Impulsivity has also shown significant difference among schizophrenia patients (M=4.94, SD=1.846) and normal healthy control group (M=5.91, SD=1.837); $t_{(68)}$ =2.207. On Conformity factor, patients suffering from schizophrenia (M=4.03, SD=1.425) and normal healthy control

Table-1. Personality as measured by 16 PF among patients with schizophrenia and normal healthy individual using t-test

Factors	Schizophrenics			Normal			't'-value
	N	Mean	SD	N	Mean	SD	
Warmth	35	5.29	1.655	35	5.37	1.655	0.217
Intelligence	35	4.03	2.203	35	6.26	1.597	4.846**
Ego-Strength	35	3.51	1.011	35	4.66	1.327	4.053**
Dominance	35	6.74	1.804	35	6.03	1.248	1.926
Impulsivity	35	4.94	1.846	35	5.91	1.837	2.207*
Conformity	35	4.03	1.425	35	5.71	1.1	5.508**
Boldness	35	4.31	1.676	35	6.2	1.605	4.807**
Sensitivity	35	6.17	1.361	35	5.43	1.461	2.201*
Suspiciousness	35	7.66	1.862	35	6.03	1.917	3.605**
Imagination	35	5.83	1.505	35	6.11	1.409	0.82
Shrewdness	35	5.29	1.545	35	5.74	1.915	1.099
Insecurity	35	7.97	1.382	35	5.69	1.586	6.427**
Radicalism	35	5.97	1.706	35	6.23	1.816	0.61
Self-Sufficient	35	7.29	1.708	35	5.86	0.478	3.742**
Self-Disciplined	35	3.63	1.592	35	6.4	2.032	6.351**
Tension	35	7.54	1.336	35	4.51	1.483	8.978**

** P<0.01 *P<0.05

group (M=5.71, SD=1.1); $t_{(68)}$ =5.508 have shown statistically significant difference. On personality factor Boldness, there was a significant difference among schizophrenia group (M=4.31, SD=1.676) and normal healthy group (M=6.2. SD=1.605); $t_{(68)}$ =4.807. There was a significant difference between the score of patients with schizophrenia (M=6.17, SD=1.361) and normal healthy people (M= 5.43, SD=1.461); $t_{(68)}$ =2.201 on Sensitivity factor. The scores of Suspiciousness factor revealed that there was highly significant difference between the personalities of patients with schizophrenia (M=7.66, SD=1.862) and control group (M=6.03, SD=1.917); $t_{(68)}$ =3.605. On Insecurity factor, there was highly significant difference among patients with schizophrenia (M=7.97, SD=1.382) and normal healthy group (M=7.97, SD=1.382); $t_{(68)}$ =6.427. The factor Self-Sufficient showed significant difference among schizophrenia group (M=7.29, SD=1.708) and normal healthy individuals (M=5.86, SD=.478); $t_{(68)}$ =3.742. There was a statistically significant difference on the Self-Disciplined factor among people suffering from schizophrenia (M=3.63, SD=1.592) and normal healthy people (M=3.63, SD=1.592); $t_{(68)}$ =6.351. On Tension sub-scale, highly significant difference was found among individuals with schizophrenia (M=7.54, SD=1.336) and normal healthy control group (M=4.51, SD=1.483); $t_{(68)}$ =8.978.

Table 2 shows comparisons between the family environment of people with schizophrenia and normal healthy individual. On Cohesion subscale, there was highly significant difference among the patients suffering from schizophrenia (M=16.69, SD=7.291) and normal healthy people (M=23.57, SD=5.025); $t_{(68)}$ =4.6. The data on Conflict sub-scale has shown statistically significant difference among schizophrenia group (M=15.03, SD=3.682) and normal healthy group (M=12.4, SD=3.406); $t_{(68)}$ =3.1. The independence sub-scale has shown a statistically significant difference among people suffering from schizophrenia (M=19.34, SD=5.729) and normal healthy controls (M=24.11, SD=5.34); $t_{(68)}$ =3.604. Intellectual Cultural Organisation sub-scale has shown statistically significant difference among individuals with schizophrenia (M=10.89, SD=5.687) and normal healthy individuals (M=17.6, SD=4.571); $t_{(68)}$ =5.444. There was a highly significant difference among the patients with schizophrenia (M=8.77, SD=4.833) and normal healthy people (M=15.46, SD=3.783); $t_{(68)}$ =6.444 on the Active Recreational Orientation sub-scale. A statistically significant difference was found among patients suffering from schizophrenia (M=16.83, SD=5.602) and normal healthy control group (M=19.71, 3.669); $t_{(68)}$ =2.543 on the organization sub-scale of family environment.

Table 3 shows correlation between personality factors and family environment among patients with schizophrenia. The data revealed that warmth factor was correlated with expressiveness (Pearson 'r'=-.321) and Moral Religious Emphasis (Pearson 'r'=-.259) subscale. On Intelligence factor, significant relationship was found with Cohesion (Pearson 'r'=.382), Conflict (Pearson 'r'=.265), Independence (Pearson 'r'=.292), Intellectual Cultural Orientation (Pearson 'r'=.304) and Active Recreational Orientation (Pearson 'r'=.261).

Table-2: Family environment as measured by FES among patients with schizophrenia and normal healthy individuals using t-test

Sub-Scales	Schizophrenics			Normal			't'-value
	N	Mean	SD	N	Mean	SD	
Cohesion	35	16.69	7.291	35	23.57	5.025	4.6**
Expressiveness	35	16.46	4.368	35	17.03	3.974	0.57
Conflict	35	15.03	3.682	35	12.4	3.406	3.1**
Independence	35	19.34	5.729	35	24.11	5.34	3.60**
Achievement Orientation	35	17.69	5.481	35	19.66	3.307	1.8
Intellectual Cultural Organization	35	10.89	5.687	35	17.6	4.571	5.44**
Active Recreational Orientation	35	8.77	4.833	35	15.46	3.783	6.44**
Moral Religious Emphasis	35	20.4	5.852	35	19.11	4.6	1.02**
Organization	35	16.83	5.602	35	19.71	3.699	2.54*
Control	35	15.6	4.427	35	15.89	2.774	0.32

** P<0.01 *P<0.05

Table-3: Show interrelationship between Personality Factors and Family Environment among patients with schizophrenia using correlation

Factors	Cohesion	Expressiveness	Conflict	Independence	Achievement Orientation	Intellectual Cultural Orientation	Active Recreational Orientation	Moral Religious Emphasis	Organisation	Control
Warmth	-0.13	-.321**	0.09	-0.07	0.00	-0.16	-0.14	-.259*	-0.11	-0.09
Intelligence	.382**	-0.02	-.265*	.292*	0.20	.304*	.261*	-0.07	0.21	0.16
Emotional-Stability	.247*	-0.15	-0.04	0.14	-0.02	0.23	0.22	-0.10	0.23	0.17
Dominance	-0.15	-0.21	0.06	-0.20	-0.18	-0.15	-0.16	0.09	-0.17	-0.06
Liveliness	0.11	-0.23	-0.14	0.13	0.15	0.19	.279*	0.03	0.02	-0.03
Rule-Consciousness	.357**	0.03	-.261*	.246*	0.05	.294*	.404**	-0.05	0.17	-0.08
Social- Boldness	.402**	0.04	-0.22	.286*	0.10	.259*	.327**	-0.05	.254*	0.07
Sensitivity	-0.16	.241*	0.22	-0.14	-0.03	-.362**	-.359**	0.19	-.284*	0.03
Vigilance	-.432**	-0.14	.301*	-.309**	-0.16	-.288*	-.238*	0.02	-0.21	0.04
Abstractedness	-0.06	-0.13	0.05	-0.02	-0.21	-0.04	-0.12	-0.09	0.05	-0.04
Privatness	-0.06	0.13	0.02	-0.07	-0.13	-0.15	-0.03	-.263*	-0.09	0.12
Apprehension	-.494**	-0.06	.330**	-.442**	-0.16	-.387**	-.366**	0.03	-.241*	0.01
Openness to Change	0.07	0.12	-0.21	0.13	-0.18	0.12	0.13	0.07	-0.04	-0.11
Self-Reliance	-0.23	-0.12	0.09	-0.21	-.244*	-.276*	-.389**	-0.20	-0.08	-0.01
Perfectionism	.489**	0.11	-.411**	.458**	0.17	.489**	.503**	-0.01	.311**	-0.02
Tension	-.507**	-0.10	.371**	-.410**	-0.11	-.373**	-.396**	0.22	-.256*	-0.02

** P<0.01 *P<0.05

Emotional Stability factor was correlated with Cohesion (Pearson 'r'=.247). The factor Liveliness was associated with sub-scale Active Recreational Orientation (Pearson 'r'=.279). On Rule-Consciousness factor, positive correlation was found with Cohesion (Pearson 'r'=.357), Conflict (Pearson 'r'=-.261), Independence (Pearson 'r'=.246), Intellectual Cultural Orientation (Pearson 'r'=.294) and Active Recreational Orientation (Pearson 'r'=.404) sub-scales. Social-Boldness factor was correlated with Cohesion (Pearson 'r'=.402), Independence (Pearson 'r'=.286), Intellectual Cultural Orientation (Pearson 'r'=.259), Active Recreational Orientation (Pearson 'r'=.327) and Organisation (Pearson 'r'=.254) sub-scales. The data of Sensitivity factor has shown significant relationship with Expressiveness (Pearson 'r'=.241), Intellectual Cultural Orientation (Pearson 'r'=-.362), Active Recreational Orientation (Pearson 'r'=-.359) and Organisation (Pearson 'r'=-.284) sub-scales. The factor Vigilance was associated with Cohesion (Pearson 'r'=-.432), Conflict (Pearson 'r'=.301), Independence (Pearson 'r'=—.309), Intellectual Cultural Orientation (Pearson 'r'=-.288), and Active Recreational Orientation (Pearson 'r'=-.238). The Privatness factor was correlated with Moral Religious Emphasis (Pearson 'r'=-.263) sub-scale. On Apprehension factor, statistically significant relationship was found with Cohesion (Pearson 'r'=-.494), Conflict (Pearson 'r'=.330), Independence (Pearson 'r'=-.442), Intellectual Cultural Orientation (Pearson 'r'=-.387), Active Recreational Orientation (Pearson 'r'=-.366), Organisation (Pearson 'r'=-.241) sub-scales. The data on Self-Reliance factor was associated with Achievement Orientation (Pearson 'r'=-.244), Intellectual Cultural Orientation (Pearson 'r'=-.276), and Active Recreational Orientation (Pearson 'r'=-.389). The factor Perfectionism was correlated with Cohesion (Pearson 'r'=.489), Conflict (Pearson 'r'=-.411), Independence (Pearson 'r'=.485), Intellectual Cultural Orientation (Pearson 'r'=.489), Active Recreational Orientation (Pearson 'r'=.503) and Organisation (Pearson 'r'=.311) sub-scales. On Tension factor, statistically strong association was found with Cohesion (Pearson 'r'=-.507), Conflict (Pearson 'r'=.371), Independence (Pearson 'r'=-.410), Intellectual Cultural Orientation (Pearson 'r'=-.373), Active Recreational Orientation (Pearson 'r'=-.396) and Organisation (Pearson 'r'=-.256) sub-scales.

Discussion

The present study aims to compare personality,

family environment and its sub-scales among patients with schizophrenia and normal healthy individuals and to explore the relationship between personality factors and family environment of schizophrenia patients.

The first objective was to compare various factors of personality among patients suffering from schizophrenia and normal healthy people, the findings indicates that among the 16 personality factors, highly significant difference was found on Warmth, Intelligence, Emotional Stability, Liveliness, Role-Consciousness, Social- Boldness, Sensitivity, Vigilance, Privatness, Apprehension and Tension whereas statistically significant difference was found on Dominance and Vigilance. The scores on intelligence factor revealed that schizophrenia patients have less perseverance, poor judgement capacity. Similar was the finding of Langdon, Connors and Connaughton (2014) who found that basic social knowledge is intact in schizophrenia, though judgments of social behaviour are affected by patients' theory-of-mind deficits.[13]Schizophrenia patients have weaker ego-strength, have poor perception of reality. This indicates that they do not have the ability to deal with frustration and show excessive worry over trivial things. Present finding is in agreement with previous studies of Mohammad, and his colleagues (2013) which show that the schizophrenic children have weaker functioning in reality testing compared with normal children[14]. On impulsivity factor, schizophrenic people shows significant difference which depicts that they are rigid, anxious, dull and depressed, while the high scores show that individual is expressive, spontaneous, and happy go lucky. Similar findings were reported by Peter Bosanac and David J Castle (2012) which shows that depressive symptoms are common in people with schizophrenia and can be associated with suicidality, but are often either missed or dismissed by clinicians[15]. Similarly Aguocha et al found that co-morbid anxiety disorders are common with schizophrenia and they are associated with increased disability and psychopathology. The results emphasise the need to screen for anxiety disorders in patients with schizophrenia[16]. The schizophrenic patients have poor conformity which shows that they have self-indulgent, undependable, frivolous personality. This observation substantiated the similar finding in the study done by Marsella AJ (1975) which reported that manic-depressive and normal confirmed significantly more than paranoid schizophrenics, but did not differ from each other on either of the conformity tasks[17]. The finding also concluded that people with schizophrenia possess poor social bonding which depict that they are shy, threat-sensitive, timid and hesitant. The findings on vigilance factor depicts that schizophrenia group have high sensitivity. This shows that they are dependent, insecure and emotionally sensitive. Linda, et al. found that patients' STC (sensitivity to criticism) influenced the level of stress.[18]On apprehension factor, patient with schizophrenia shows statistically significant difference from the normal people. It reveals that they have self-doubt, are worried, guilt-prone, insecure and self –blaming. Susanne and Harder reported that insecure attachment was found to predict impaired recovery from negative symptoms.[19] The finding of Self–Reliance factor show significant difference among schizophrenic and control group. This shows that they are solitary, resourceful, individualistic, and self-sufficient. Palazzolo et. al. found that Social isolation is one of the greatest losses in schizophrenia[20]. The schizophrenia group scored significantly different on perfectionism factor. This means that they are impulsive, careless of social rules, uncontrolled. Similar were the finding of Najt et al[21] and Ouzir[22] who concluded that Impulsiveness is a clinical feature of both schizophrenia and bipolar disorder. The results of tension factor depicts that the patients with schizophrenia have high tension which may lead to frustration, impatience, and show socially undesirable tendencies. In a nutshell, it can be concluded that personality interact with psychosocial variables, psychopathology and coping strategies of patients with schizophrenia.

Second objective was to the study family environment and its sub-dimensions among schizophrenia group and normal healthy control group. The analysed data depicted that there was statistically significant difference among both the groups on the subscales of Family Environment Scale. The findings show that highest significant difference was found on Active Recreational Orientation sub-scale which measures the extent to which the family participates actively in various kinds of recreational and sporting activities. Recreational

activities can counter-affect the symptoms of schizophrenia and render positive effects to those suffering from these diseases[23]. There was a statistically significant difference on Intellectual Cultural Orientation among the groups. This shows that schizophrenia group has lack of concern about political, social, intellectual and cultural activities. Patterson et al. had found that patients demonstrated significantly greater disability in all areas of social functioning compared with normal comparison subjects (NCs). Hence, concluded that they lack insight into their own behavior[24]. Another such attempt was made by Sharma and Gupta who found that different types of delusions occurred in different types of families. This added to the clinical observation that content of delusions is affected by socio-cultural factors[25]. On Cohesion subscale, there was significant difference between the groups. This shows that schizophrenia group lack supportiveness, helpfulness and co-operation as compared to control group. Similar was the finding of Weisman et al, who reported that greater levels of family cohesion had fewer psychiatric symptoms and reported feeling less distress[26]. The findings on Independence sub-scale also show significant difference which signifies that schizophrenia family do not encourage being assertive, self-sufficient, to make their own decisions and to think things out for themselves. The data on conflict subscale suggest that the open expression of anger and aggression and generally conflictual interactions are the prominent characteristics of schizophrenia family. There was significant difference between schizophrenia group and control group on Organisation sub-scale which denotes how important order and organisation is in the family in terms of structuring the family activities, financial planning and explicitness and clarity in regard to family rules and responsibilities. Thomas et al. found a significant positive correlation between dysfunction and disruption of family interaction, in a study assessing the extent and pattern of psychosocial dysfunction and family burden in 35 schizophrenia patients[27].On the basis of this study, it can be concluded that an individual with schizophrenia may faces the problem of supportiveness, participating in various socio-cultural activities, encouraging being self-sufficient and conflictual interaction among the family members. Hence, families of schizophrenics need and want education, coping and communication skills, emotional support and to be treated as collaborator in the management of a relative's illness.

The third objective of the present study was to explore the relationship of personality factors and family environment of individuals with schizophrenia. For this purpose, data was correlated and it was noted that among the sixteen factors of personality significant correlation was found on the following sub-scales of family environment:

The first factor was Warmth which has shown strong correlation with expressiveness and Moral Religious Emphasis dimensions of family environment scale. Second factor was Intelligence which was interrelated with Cohesion, Conflict, Independence, Intellectual Cultural Orientation, and Active Recreational Orientation. Next was the factor of Emotional Stability which was correlated with Cohesion sub-scales. Then, the factor Liveliness was correlated with the dimensions of family environment and has shown strong association with Active Recreational Orientation. The fifth personality factor was Rule-Consciousness which was strongly correlated with Cohesion, Conflict, Independence, Intellectual Cultural Orientation, and Active Recreational Orientation. The Social-Boldness factor has shown strong relationship with Cohesion, Independence, Intellectual Cultural Orientation, Active Recreational Orientation and Organization subscales. The results revealed that there was strong association between Sensitivity and Expressiveness, Intellectual Cultural Orientation, Active Recreational Orientation, and Organization. Next was Vigilance factor, which was highly associated with Expressiveness, Intellectual Cultural Orientation, Active Recreational Orientation, and Organization sub-scales. A significant correlation was seen between Privatness and Cohesion, Conflict, Independence, Intellectual Cultural Orientation, and Active Recreational Orientation. There was a strong relationship between Apprehension and Moral Religious Emphasis. The personality factor Self-Reliance was strongly correlated with Cohesion, Conflict, Independence, Intellectual Cultural Orientation, Active Recreational Orientation, and Organization Sub-scales. Next was Perfectionism factor which shown strong correlation with Achievement Orientation, intellectual Cultural Orientation, and Active Recreational Orientation. The last factor was Tension which has shown strong

correlation with Cohesion, Conflict, Independence, Intellectual Cultural Orientation, Active Recreational Orientation, and Organization sub-scales. Therefore, certain personality factors such as Emotional Stability, Sensitivity etc. and certain family environment dimensions such as Cohesion, Expressiveness etc. can increase the severity of schizophrenia among schizophrenic patients.

Limitations

Generalisations from this study should be considered in the light of certain limitations. The sample included a limited age range, was small in number, and was drawn from one city only. In addition, the sample group was not large enough to generalise to the population. Nonetheless, given the heuristic nature of this study, the findings could lead to new hypotheses for future studies.

Conclusion

Findings of the study revealed that there was a significant difference between the personality factors of patients with schizophrenia and normal healthy individuals. From the viewpoint of prevention, exploring personality traits is one of the prominent factors in identifying those at high risk for hospital admission or attempted suicide. There was significant difference found on the sub-scales of family environment scale which depict that schizophrenia individuals have poor family functioning. Therefore, along with psychiatry treatment program, psycho-educational and psycho-social intervention should also be considered for patients with schizophrenia and family caregiver as well.

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Original Article

A descriptive cross-sectional study to assess intimate partner violence (IPV) among wives of patients with schizophrenia

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ABSTRACT

Introduction: *Intimate Partner Violence (IPV)is prevalent worldwide and is a major public health problem because of its adverse outcomes in terms of physical, mental and psychological health of the victims. There are clearly documented evidences that IPV is found more in spouses of patients with schizophrenia especially of male patients. Hence this study is aimed to assess prevalence and determine any associated risk factors of IPV among wives of patients with schizophrenia.* ***Methods:*** *This was a descriptive cross-sectional study, carried out in Department of Psychiatry and Drug De-addiction Centre of a Tertiary Government Hospital in New Delhi.: Forty male patients were screened using Diagnostic and statistical manual 5 (DSM –5) for schizophrenia and Positive and Negative Syndrome Scale (PANSS) was applied for symptom severity. Their spouses were assessed using abusive behavior inventory (ABI) for identifying physical, sexual, and emotional abuse. Descriptive Statistics were used for the Socio-Demographic Variables. Correlation was carried out using Pearson's test of Correlation.* ***Results:*** *Six months prevalence for physical abuse was 80%, 84.5% for psychological abuse and 72.5% for sexual abuse. Total ABI score was found to be positively correlated with the positive PANSS score ($P<0.05$). The duration of marriage and untreated illness duration was positively correlated with the total abuse score ($P<0.05$) as well as the various subscales.* ***Conclusion:*** *There is high prevalence of IPV among spouses of patients with schizophrenia. Clinicians need to be sensitized to involve the spouses in treatment process.*

Key words: *Intimate partner violence, Abuse, Schizophrenia, Women.*

Introduction

The World Health Organization defines violence as "The intentional use of physical force or power, threatened or actual, against oneself, another person, or against a group or community, that either results in or has a high likelihood of resulting in injury, death, psychological harm, mal-development or deprivation".[1] The term "intimate partner violence" describes violence by a current or former intimate partner. The Centers for Disease Control and Prevention[2,3] describes IPV into 4 types: (1) Physical Violence, (2) Sexual Violence, (3) Threat of Physical or Sexual Violence and (4) Psychological/Emotional Abuse.

IPV is a major public health problem because of its adverse outcomes in terms of physical, mental and psychological health of the victims. IPV can directly lead to serious injury, disability or death especially in women.[4] The physical injuries could be in the form of cuts, bruises, fractures, loss of vision, hearing, or sight. Sexual violence may lead to unwanted pregnancies and sexually transmitted infections including HIV/AIDS.[5] They can also lead

indirectly to a number of health problems like substance use, depression, anxiety, eating and sleeping disorders, phobias, panic attacks, poor self-esteem, stress induced physiological changes etc.[6]

According to a WHO multi-country study on Women's Health and Domestic Violence against Women[7] proportion of women who ever experienced physical or sexual violence or both by an intimate partner were found to range from 15% to 71%. The most common act of physical violence experienced by women was being slapped by their partner followed by being struck with a fist. The sexual abuse by an intimate partner ranged from 6% to 59% with majority between 10% and 50%. In India the National Family Health Survey (NFHS-3), 2005–06[8] found 35.1 % of married women reported having experienced physical violence, 10% reported of sexual violence and 15.8% reported of emotional violence by their intimate partner.

The WHO ecological model[9] organizes risk factors according to the following four levels of influence which are Individual, Relationship, Community and Societal level. Woman's age is interestingly correlated with IPV. Young age is a risk factor for being a perpetrator or victim of intimate partner violence, and a victim of sexual violence.[9] While increasing age was associated with higher chances of experiencing IPV in some studies.[10] Educational status of women also plays a significant factor as demonstrated by Ackerson et al that women with no formal education were 4.5 times more likely to report lifetime IPV compared with those schooled for more than 12 years.[11] Indian research too shows that higher level of education in women is a protective factor against IPV.[12] There is a strong link of substance abuse and IPV as revealed by a United Nation Study showing an increasing prevalence of IPV among men abusing psychotropic substances especially alcohol.[13] And similarly pattern of alcohol use in India has shown a sharp increase in IPV.[14] Various other risk factors of IPV include exposure to child maltreatment,[15] higher socio-economic status,[16] lack of marital satisfaction,[17] and high tolerance of abuse in community.[18] Furthermore IPV is more common in women who live in communities with poverty and neighborhood disadvantage.[19]

Schizophrenia is a severe mental disorder, characterized by profound disruptions in thinking, affecting language, perception, and the sense of self. It often includes psychotic experiences, such as hearing voices or delusions.[20] There is an increased risk of violence in individuals with schizophrenia and other psychoses.[21] In a study Brekke et al., 172 individuals with schizophrenia or schizoaffective disorder were evaluated and found higher risk of violence in them. Poorer social functioning, fewer days of taking medication at baseline, and a history of arrest and assault were significant predictors of violent behavior.[22]

In a study Jungbauer et al., 52 spouses of patients with schizophrenia were interviewed and some of them talked about physical violence perpetuated by their spouse, so much so that made them to think about separation or divorce.[23]

Although there have been some studies showing increased IPV in spouses of schizophrenia there is still there have been a few aspects which are less well assessed:

1. Most of the studies have been done in western countries which are not relevant in Indian context owing to differences in socio-cultural and demographic profile.
2. Few studies have considered the severity of disease while assessing these parameters.

Methods

Study was conducted in the Department of Psychiatry and De-addiction Centre of a Tertiary Care Government Hospital in Northern India. The study was carried out over a period of 5 months. It was a cross-sectional study with assessment of patientsand their spouses. Forty male patients with diagnosis of schizophrenia and their spouses who met the inclusion criteria were enrolled in the study. Written informed consent was taken from them. Only male patients from the outpatient department were included in the study to make the sample homogenous.

Inclusion criteria

1. Patients with age range 22-50 years of male sex.
2. Willing to participate in study and give Informed consent.
3. Fulfilling the diagnostic criteria of schizophrenia according to Diagnostic and statistical manual 5 (DSM –5).

4. Duration of illness of at least 12 months.
5. Married for at least 1 year and cohabiting since then.
6. Accompanied with the spouse.

Exclusion criteria

1. Patients with co-morbid substance use disorder except tobacco and caffeine
2. Patients with any other psychiatric disorder.
3. Patients with neurological illness like organic brain disease, mental retardation, epilepsy or with major physical or surgical illness (past 12 months).
4. Patients who were divorced or separated.
5. Spouse suffering from any major physical/ surgical illness/substance use disorder except tobacco and caffeine.

Study subjects were recruited from among the patients seeking health services in the Department of Psychiatry, LHMC New Delhi. A register was maintained for patients diagnosed with schizophrenia and from there every third patient was screened for participation in the study using inclusion and exclusion criteria. If this patient along with his spouse satisfied the criteria and agreed to give the consent he was included in study else next patient was considered till a suitable patient was found. Thereafter again the third patient from this selected patient waschosen. Their socio-demographic information was obtained using a semi-structured Performa. Severity of schizophrenia and was then assessed using Positive and Negative Syndrome Scale (PANSS) which is rated from 1 to 7 on 30 different symptoms. Of the 30 items included, 7 constitute a Positive scale, 7 a Negative scale, and the remaining 16 a General psychopathology scale. The scores for these scales are arrived at by a summation of ratings across component items.[24] Thereafter Spouses were then interviewed for physical, psychological, and sexual abuse in the last 6 months using abusive behavior inventory (ABI).[25] ABI is a 30 item likert scale assessing each item on a scale of 1–5 with internal consistency between 0.79 and 0.92 and evidence of criterion, convergent, and discriminant validity.Kuppuswamy's socio-economic status scale to assess socio-economic status of patients and spouses.[26]

Results

Table 1 and 2 show socio-demographic profile of patients.

As shown in Table 3 to 5, observed percentage of frequencies of all the abuse items on the abuse behavior inventory scale was calculated for the last 6 months. Table 6 indicate scores on ABI. Table 7 shows correlation between PANSS and ABI scores whereas Table 8 shows correlation between abusive behaviour and ABI scores in spouses of patients.

Discussion

The following were the important findings in the study:

1. Prevalence of physical abuse was found to be almost 80% among the spouses of patients with schizophrenia over a period of last 6 months which was found to be higher than the WHO Multi-country Study on Women's Health and Domestic Violence against Women, 2005.[7] This could be because it did not take into account the psychiatric illness in the husband. But physical abuse prevalence was also higher in Indian study by Kumar et al[27] among spouses of schizophrenia which could be because of the bigger sample size which might be one of the reasons for the difference in the prevalence. In the study, prevalence of psychological abuse among spouses was found to be 84.5% which was slightly higher than study done by Eby et al. [28] While prevalence of sexual abuse was 72.5% which was higher than a cohort

Table-1: Socio-demographic distribution of patients of Schizophrenia: (N= 40)

Variables	Minimum	Maximum	Mean	Std. Deviation
Age of patient(years)	22	47	34.45	7.197
Age of spouse(years)	20	43	31.30	6.779
Duration of marriage (years)	1	18	7.98	5.235
Duration of cohabitation (years)	1	18	7.98	5.235

Table-2: Socio-demographic distribution of patients of Schizophrenia

Variable	Frequency (n)	Percentage (%)
Family h/o psychiatric illness		
Yes	12	30.0
No	28	70.0
Religion		
Hindu	32	80
Muslim	8	20
Others	0	0
Family type		
Nuclear	25	62.5
Joint	15	37.5
Eduaction of patient		
Illiterate	7	17.5
Upto high school	8	20.0
High school to intermediate	13	32.5
Graduate	11	27.5
Post graduate	1	2.5
Eduaction of spouse patient		
Illiterate	5	12.5
Upto high school	13	32.5
High school to intermediate	16	40.0
Graduate	6	0
Post graduate	0	0

Table-3: Observed percentage of frequency of abusive behavior (item 1-15) in past 6 months as per category of abuse among partners with schizophrenia:

Items of ABI scale (n=40)	Frequency (%)				
(1-15)	Never	Rare	Occasional	Frequent	Very frequent
1. Called you a name and/or criticized you	12.5	45	27.5	10	5
2. Tried to keep you from doing something you wanted to do	12.5	35	27.5	15	10
3. Gave you angry stares or looks 4. Prevented you from having money for your own use	10	37.5	35	7.5	10
5. Ended a discussion with you and made the decision himself	15	40	37.5	2.5	5
6. Threatened to hit or throw something at you	15	42.5	20	15	7.5
7. Pushed, grabbed, or shoved you	20	35	27.5	15	2.5
8. Put down your family and friends	20	37.5	27.5	10	5
9. Accused you of paying too much attention to someone or something else	15	37.5	25	15	7.5
10. Put you on an allowance	20	35	25	15	5
11. Used your children to threaten you	22.5	32.5	25	15	5
12. Became very upset with you because dinner, housework, or laundry wasnot ready when he wanted it or done the way he thought it should be	12.5	37.5	25	20	5
13. Said things to scare you	15	35	27.5	12.5	10
14. Slapped, hit, or punched you	17.5	32.5	30	15	5
15. Made you do something humiliating or degrading forgiveness, having to ask his permission to use the car or do something	10	35	37.5	12.5	5

study[29] done on spouses of patients with schizophrenia. Reported physical and psychological abuse was higher than the reported sexual abuse in this study which could be because of reluctance associated with discussing sexual activities in our social

Table-4: Observed percentage of frequency of abusive behavior (item 16-30) in past 6 months as per category of abuse among partners with schizophrenia:

Items of ABI scale (n=40)	Frequency (%)				
(16-30)	Never	Rare	Occasional	Frequent	Very frequent
16. Checked up on you	15	30	37.5	12.5	5
17. Drove recklessly when you were in the car	20	35	25	15	5
18. Pressured you to have sex in a way that you didn't like or want	25	42.5	20	7.5	5
19. Refused to do housework or childcare	15	30	35	17.5	2.5
20. Threatened you with a knife, gun, or other weapon	20	40	25	10	5
21. Spanked you	20	42.5	22.5	10	5
22. Told you that you were a bad parent	17.5	40	22.5	17.5	2.5
23. Stopped you or tried to stop you from going to work or school	20	37.5	22.5	12.5	7.5
24. Threw, hit, kicked, or smashed something	22.5	40	20	10	7.5
25. Kicked you	20	37.5	30	7.5	2.5
26. Physically forced you to have sex	27.5	37.5	17.5	15	2.5
27. Threw you around 28. Physically attacked the sexual parts of your body	22.5	37.5	30	7.5	2.5
29. Choked or strangled you	22.5	40	25	7.5	5
30. Used a knife, gun,other weapon against you	25	40	25	5	5

Table-5: Observed frequency of abusive behavior in past 6 months as per category of abuse among partners with schizophrenia:

Clinical variables (n=40)	Percentage (%)				
	Never	Rare	Occasional	Frequent	Very frequent
Physical abuse*	20.5	38.8	25.5	10.2	5.2
Psychological abuse†	15.7	36	28.9	13.2	6.4
Sexual abuse‡	20.8	40.8	17.5	10	4.16

*Physical abuse was determined by item 6, 7, 14, 20, 21, 24, 25, 27, 29 and 30.
† Psychological abuse was determined by item 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 15, 16, 17, 19, 22 and 23
‡Sexual abuse by item 18, 26, and 28.

Table-6: Means of total ABI score and its subscales (physical, psychological and sexual)

Variables	Minimum	Maximum	Mean	Std. Deviation
Physical	10	46	23.9	9.6
Psychological	17	75	44.12	15.2
Sexual	3	12	6.1	2.5
Total	30	131	74.2	26.9

context. Higher prevalence of abuse in our study in comparison to the other studies in literature could be because the patients who reported to our hospital might have severe illness.

2. Total abuse behavior inventory (ABI) score was found to be significantly and positively correlated with the positive PANSS score which is similar to the findings in a study conducted by Krakowski et al. where positive psychotic symptoms differentiated the violent patients (transiently and persistently violent) from the control subjects (non-violent).[23] While negative symptom was negatively correlated to total ABI score but was not found to be significant. This can be explained by the fact that positive symptoms lead to more

Table-7: Correlation of PANSS scale with total ABI score in spouses of patients with schizophrenia:

	Variables	Total ABI score
PANSS positive	Pearson correlation	.697
	P value	.003
	N	40
PANSS negative	Pearson correlation	-.056
	P value	.366
	N	40
PANSS general psychopathology	Pearson correlation	.619
	P value	.040
	N	40
Total score	Pearson correlation	.706
	P value	.001
	N	40

Table-8: Correlation of study variables with physical abuse, psychological abuse, sexual abuse and total ABI score in spouses of patients with schizophrenia:

Variables		Physical abuse	Psychological abuse	Sexual abuse	Total ABI score
Duration of marriage (years)	Pearson correlation	.437	.427	.368	.444
	P value	.002	.003	.010	.002
	N	40	40	40	40
Untreated illness (years)	Pearson correlation	.329	.383	.378	.379
	P value	.019	.007	.008	.008
	N	40	40	40	40

* As shown in table 8, duration of marriage was significantly positively correlated with the total ABI score as well as the three subscale scores.

† Similarly untreated illness duration was positively correlated with the total ABI score and the various subscale scores.

* As shown in table 7, Total ABI score of spouses was found to have a significant positive correlation with positive, general psychopathology and total PANSS score of the patients with schizophrenia, while no significant correlation was found with negative PANSS score.

irritability and aggressive behavior which can be precursor to abusive acts. This further strengthens an Indian study conducted by Kumar et al.[27] where Pearson's correlation coefficient between the total of aggression score and the total of BPRS score was 0.4194 which was highly significant (p=0.002).

3. In the study, duration of marriage was positively correlated with the total abuse score (P<0.05) as well as the various subscales. This could be attributed to the more number of exaggerations of illness experienced, poorer marital quality, and more burn out in the spouse with more years spent together with the patient. No study could be found to have studied this variable.
4. Furthermore, untreated illness duration was positively correlated with abuse behavior inventory (P<0.05), this can be because longer the duration a person is untreated; more are the likelihood of increase in symptoms severity and more incidences of abuse.

Among the many, some of the strengths of our study were use of standardized research diagnostic criteria for diagnosis, standardized rating scales for assessing the severity of illness. The interviews were conducted strictly in environment of privacy and complete confidentiality of the responses was assured. We could not find any significant association between other demographic variables

like education levels, socio-economic status etc. and IPV. This could be because of smaller sample size of the study. Few other limitations of our study were that it comprised of a hospital based sample which precludes generalization of the results. Absence of a healthy control group which didn't allowed comparing findings of the current study. Study population i.e. spouses were of only female gender of the patients with schizophrenia and hence data of the opposite gender could not be assessed.

Conclusion

Our study found a high prevalence of overall, physical, psychological, and sexual abuse in the spouses of patients with schizophrenia. Correlation of duration of marriage and untreated duration of illness with IPV shows the importance of early diagnosis and treatment of patient with schizophrenia to prevent not only the ill effect of the disorder to the patient but also to the spouse and to improve the overall well-being. Clinicians need to be sensitized to involve the spouses in the treatment process for the benefit of the patients. If treatment is focused towards improving spouses' perception regarding marital relationship then it may lead to favorable prognosis for the patient. A strong opinion should be put across to policy makers for making patient and caregiver friendly laws so that adequate support could be provided to them. A study with a larger sample size and longitudinal study design can be helpful to further support results of our study and establish cause-effect relationships.

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Original Article

Characteristics of patients applying for learning disorder disability certification in Delhi

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ABSTRACT

Background: *There is no reported data about the characteristics of the clients issued a learning disorder related disability certificate.* ***Aims:*** *This study aims to report socio-demographic and clinical characteristics of the clients certified with Learning Disorder Disability and analyzes the trends.* ***Settings and Design:*** *A retrospective chart review of all the clients certified with learning disorder disability in calendar year 2012 at IHBAS was conducted.* ***Methods and Material:*** *Socio-demographic and clinical characteristics of 39 clients certified with learning disorder disability in calendar year 2012 were collected from case-records and disability certificate register. Mean and standard deviation are used to denote averages. Percentages are used for proportions. Z-test for statistical significance of differences in proportion is applied.* ***Results****: Mean age of those certified was 17.87 years (SD = 2.56 years). Males (71.8%) were substantially over-represented among the clients than females (28.2%). None of those certified was Muslim or belonged to lower socio-economic status. All of the 39 certified clients belonged to private schools.*

Keywords*: Disability, Learning disorder, Certification*

Introduction

As per U.S. Office of Education (1977) "Learning Disorder in one or more of basic psychological processes needed to understand and use language - spoken/written, which may manifest in inability to listen, think, speak, read, write, spell, or do mathematics.[1] The term includes such conditions as perceptual handicaps, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia. The term does not include children who have learning problems which are primarily the result of visual, hearing, or motor handicaps, of mental retardation, or emotional disturbance, or of environmental, cultural, or economic disadvantage.

Although many countries recognize Learning Disabilities as one of the statutory disabilities, but the Persons with Disability Act, 1995 in India did not include learning disabilities in the list of disabilities eligible for various disability benefits.[2] This was despite the evidence that about 5% of children suffer from learning disorders in Indian settings, implying that out of about 250 million school going children, about 12.5 million children may be having from learning disorder (Shah et al 2007).[3] However, Delhi University has been offering admissions to students with learning disabilities from the year 2010 under 'three percent quota' meant for disabled persons as per provisions of the Persons with Disability Act, 1995 after intervention of Delhi High Court.[4] The recently enacted 'Rights of Persons with disabilities Act, 2016' includes 'Specific Learning Disabilities' as a specified disability. As this has been a recent development, there is no reported data about the characteristics of the applicants for such certification. Institute of Human Behaviour and Allied Sciences (IHBAS) was the only center authorized

by Government of National Capital Territory of Delhi for issuing disability certificates for 'mental illness' and 'mental retardation'in the year 2012.[5]

In this article, the socio-demographic and other characteristics of the applicants for Learning Disabilities certificate are being discussed for the first time. This certification being done as per the provisions of Persons with Disability Act, 1995 extended to learning disabilities by Delhi High Court is distinct from learning disorder certificate issued by various other agencies which although are accepted by various school boards for offering some relaxations in studies and examinations, do not entitle a person for various benefits under this act.

Methodology

This study aims to report socio-demographic and other characteristics of the applicants for learning disabilities certificate and analyze the trends. A retrospective chart review of all the persons certified to be suffering from learning disorder disability in calendar year 2012 at IHBAS as per the central register of disability certification was conducted. A total of 39 children were certified in calendar year 2012 and their data was analyzed with respect to various socio-demographic and clinical characteristics. The data was compared to the population control and z-test for statistical significance of differences in proportionwas applied.

Results

Age and sex distribution is shown in figure 1. Mean age of the applicants was 17.87 years (SD = 2.56 years. Mean age of females was 18.09 years (SD = 3.01years) and that of males was 17.79 years (SD = 2.42 years) (p=0.74). Males (71.8%) were

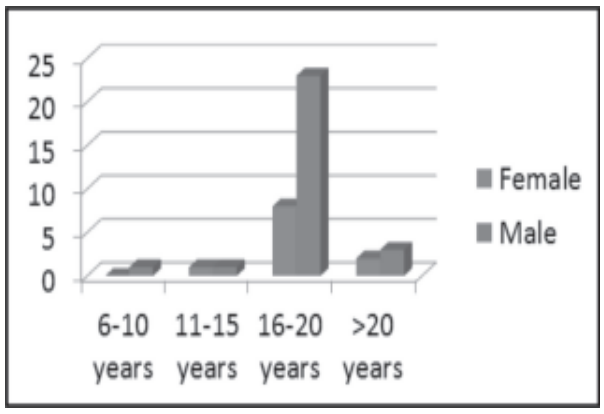

Figure 1: Age and sex distribution

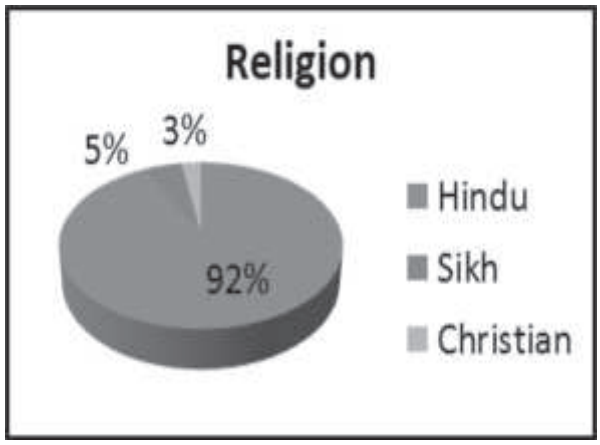

Figure 2: Distribution by Religion

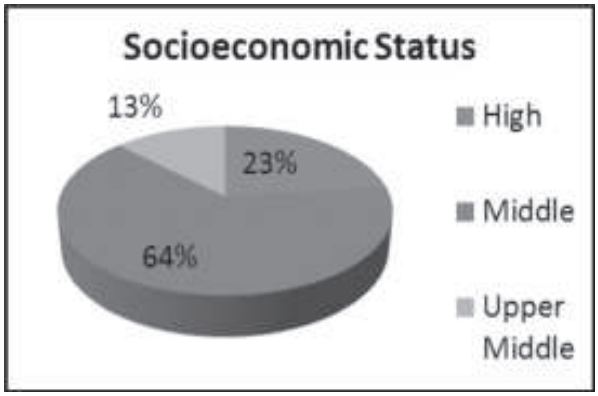

Figure 3: Distribution by Socio-economic status

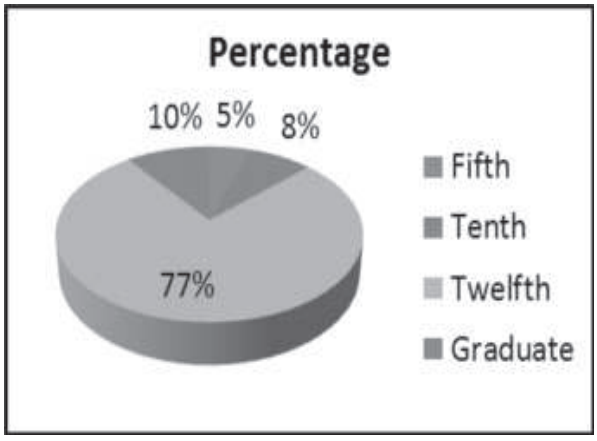

Figure 4: Educational Status

substantially over-represented in the group of the clients than female (28.2%). Most of the applicants were Hindus (Figure 2) and surprisingly none was Muslim despite having 9.2 per cent share in Delhi's population.[6] Also none of the applicant belonged to lower middle or low socio-economic status (Figure 3) despite the persons with low socio-economic status comprising 9.9 percent of Delhi's population.

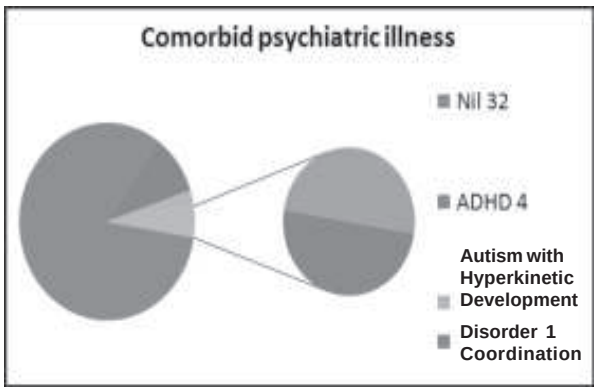

Figure 6: Co morbid Psychiatric diagnosis in applicants

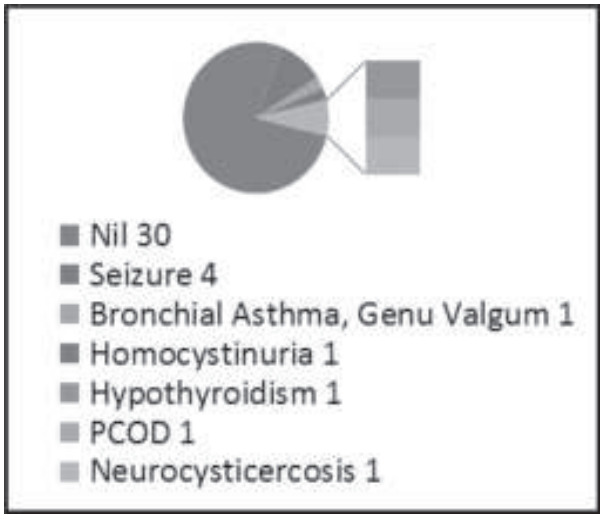

Figure 5: Medical Co-morbidities in applicants

Among the medical (Figure 5) and psychiatric co morbidities only seizure disorder and Attention Deficit and Hyperkinetic Disorder were reported in more than one applicants. 77 percent of the applicants had sought certification after completing school (Figure 4). All 39 applicants belonged to private schools (although only 23.4 % of students in Delhi study in private schools) and 59 % had already undergone assessment for learning disorder elsewhere and came for purpose of Disability Certification only. 25.6% had utilized the provision of scribe before coming for certification.

Table-1: Comparison of Socio-demographic profile of clients certified for learning disorder disability with control population

Socio-Demographic Characteristic	Certified Persons	Control Population	Control Reference	Z-Test	P value
Sex					
Male	28	117858269	Population attending schools as per census 2011	1.9765	0.0477
Female	11	92272606		-2.2463	0.0244
Socio-Economic Status					
Low	0	16.96 lakhs	Poverty data for Delhi as per (Press Note on Poverty Estimates, 2011-12. Planning Commi-ssion, Government of India. July 2013)	-2.0719	0.03846
Total population	39	171.04 lakhs			
Religion					
Total population	39	79229721	Population with Matric/Secondary level education as per census		
Muslim	0	7280155		-01.9865	0.0466
Christian	1	2923028		-0.3728	0.61138
Sikh	2	2436804		-0.7424	0.4593
Hindus	36	64783250		1.7049	0.08914
Schooling					
Private	39	63335		9.4077	0
Government/Charitable	0	207126		-11.3321	0

Discussion

This is the first report of the profile of learning disorder disability certificate applicants from this region. As this certificate is a pre-requisite for availing benefits for admissions in Delhi University under disability quota, the predominant age group is of 16-20 years. Also uncovering of disability due to increasing demands on learning skills with higher classes may be the reason for seeking certification later, although learning disorder starts manifesting in the initial school grades. The predominance of males among the applicants may be reflective of true pattern of learning disorders as reported from elsewhere.[8,9] However, in India, males are more likely to be enrolled in education than a female which may have resulted in a bias.

A glaring finding was that none of the applicant was Muslim or belonged to lower socio-economic status and all the applicants studied in private schools. This finding cannot be explained against the background socio-demographic profile of the National Capital Territory of Delhi as it is highly unlikely that socio-economically backward classes are spared specifically. This may more likely be because of lesser enrollment in formal education system and lesser awareness about this disability and associated benefits among the disadvantaged sections of the society.

The findings from this study highlight the need to create the awareness about the disability due to learning disorders in socially and economically backward sections so that they can also avail their due share of various benefits including remedial training. Also, Government schools need to gear up to identify learning disability in students. Teachers need specific training and orientation for this purpose. The recent directive by Delhi High Court making it mandatory for government schools to have special educators may change the situation to some extent.[11] Out of the 927 sanctioned posts of Special Educators, 432 remained were vacant as on February, 2017 resulting in each educator having to cater to above 400 students.

Further, it is unfortunate that the 'Result oriented' education system is leading to identification of disability only at time of board examinations and university admissions. There is need to identify the disability earlier, when students can be benefitted maximally with remedial teaching and training.

It is hoped that learning disorders will be correctly and timely identified in future even among those with adverse socio-economic background, which comprise the majority of the population, with the rising awareness, pressure of Disability Rights groups and with recently enacted Rights of Persons with Disability Act, 2016 which recognizes learning disabilities as one of the disability.[12]

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Original Article

A Study of Gynecological, Obstetric and Related Morbidities among Female Inpatients of Dissociative (Conversion) Disorder at northwest region of Rajasthan

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ABSTRACT

Background: *Dissociative (conversion) disorder cannot be explained by any neurological or medical condition and leads to symptoms and/or deficits in voluntary motor or sensory functions. Dissociative disorder is significantly prevalent in females, more in reproductive age group, and very few studies have been conducted to know this interrelation.* ***Objective:*** *This study is done to compare prevalence of gynecological and obstetric morbidities in patients of dissociative (conversion) disorders and control group at tertiary care centre.* ***Method:*** *A clinic based descriptive cross-sectional study was conducted among 100 females (50 study and 50 control) with the help of self designed semi structured proforma after obtaining informed consent.* ***Results:*** *Prevalence of menstrual, gynecological and psychosocial conditions in the study group was found to be significantly more than that found in the control group.* ***Conclusion:*** *We conclusively found that every female patient of dissociative (conversion) disorder should be thoroughly interviewed about these conditions.*

Keywords: *Dissociative (conversion) disorder, Gynecological, Menstrual, Psychosocial, Reproductive age group.*

Introduction

Dissociative (conversion) disorder[1] is a psychiatric disorder that cannot be explained by any neurological or medical condition and can lead to symptoms or deficits in voluntary motor or sensory functions.[2] Dissociative (conversion) disorders is a group of disorder which constitutes disorders like dissociative amnesia, dissociative fugue, dissociative stupor, trance and possession disorders, dissociative motor disorders, dissociative convulsions, dissociative anesthesia and sensory loss etc.[1]

Patients suffering from dissociative (conversion) disorders share a common theme in which there is partial or complete loss of the normal integration between the mind and the bodily functions.[1] These disorders have previously been classified as various types of "conversion hysteria", but now the term "hysteria" is best avoided as far as possible, in view of its many and varied meanings.[1]

Somatoform dissociation has also been proposed as a concept to cover conversion symptoms and other bodily phenomena with a dissociative origin.[3] A close association between the two has been suggested since the early nineteenth century:[4] In 1859, Briquet concluded that hysteria was the

basis of diagnosis for somatoform disorders.[5] Pierre Janet explained that somatic symptoms in dissociation may be as a result of traumatic experiences in the past.[6] Somatic complaints in women are also caused due to the distress in their social lives.[7] Gynecological symptoms such as vaginal discharge, Poly Cystic Ovarian Disease (PCOD), Pelvic Inflammatory Diseases (PID), etc are determined culturally and these symptoms are the somatic expression of distress for women who are facing severe social and psychological distress.[8] It is also believed that psychosocial factors have the strong association with the complaint of vaginal discharge.[9]

The term distress refers to a wide range of feelings including discontentment, disappointment, uneasiness, inadequacy, suppressed anger and other anxiety states which might otherwise take the form of an illogical social conflict or rebellion.[10]

Since there is a high rate of admission of dissociative (conversion) disorder patients in our institute and a very few studies have been conducted in the region to find out the associated morbidities in such patients, we planned to conduct this study with the aims to identify the prevalence and comparison of gynecological, obstetric and related morbidities and to study and compare the pattern of various domains among female inpatients of dissociative (conversion) disorders and healthy females.

Material and Method

With the aims to identify the prevalence and comparison of gynecological, obstetric and related morbidities and to study and compare the pattern of various domains among female inpatients of dissociative (conversion) disorders and healthy females, the study was conducted at institute in Department of Psychiatry, S.P. Medical College and PBM Hospital, Bikaner, India. This study consisted of 100 females which were divided into two groups-study and control group. Study group included 50 admitted female patients, in the age group of 15-60 years with diagnosis of dissociative (conversion) disorders, as per ICD-10, with mild symptoms of anxiety or depression; and control group included 50 females which were relatives or family members of other patients admitted with different diagnosis. The females in the control group were excluded for dissociative (conversion) disorders as per ICD-10. Females who were pregnant or suffered from psychiatric illness other than dissociative (conversion) disorder were also excluded from the study. The control group hailed from the same population as that of the study group and efforts were made to suitably match the groups in items of socio-demographic variables. Study was approved by the Institutional Ethics Committee and informed consent from all 100 females were taken after explaining the nature and purpose of study. The study and control groups were assessed using a screening questionnaire. The questionnaire was a semi-structured clinical proforma. This question-naire, had 30 items which assessed females under five major domains like menstrual, psychosexual, gynecological, obstetric and psychosocial conditions, and was validated by two gynecologists and three psychiatrists. Scoring was done on a dichotomous 'yes-no' response indicating the presence or absence of a particular condition. The data so generated was subjected to statistical analysis.

Statistical analysis: Statistical Product and Service Solutions (SPSS) 22 software was used for statistical analysis. For comparison of dichotomous variables, chi square test was used. Difference was considered significant when p-value < 0.05.

Results

In present study, most of the females admitted with dissociative (conversion) disorders were diagnosed as dissociative convulsions, F-44.5 as per ICD-10.

Majority of the females were in the age group of 16-30 years, married, housewives and illiterate, coming from joint family, belonging to Hindu religion and hailing from rural area, indicating that the two groups, study and control, were statistically non-significant (Table-1).

Out of 50 female inpatients of dissociative (conversion) disorder, the majority of patients (40%) complained of one or the other gynecological problems whereas only 9 (18%) in the control group complained about the same. Also, 9 (18%) out of 50 females in study group had obstetric problems and 7 (14%) out of 50 females in the control group had obstetric problems in past. Thus, the prevalence in study and control groups were found to be 40% and 18% respectively (p value= 0.0153) for gynecological conditions and 18% and 14% respectively (p value = 0.5854) for obstetric conditions (Table-

Table-1: Various socio-demographic variables in study and control group:

Variables	Study group (N=50)	Control group (N=50)	Chi square test
Age 1 – (16-30 year)	26 (52%)	28 (56%)	$\chi^2 = 0.192$
(31-45 year)	18 (36%)	16 (32%)	df = 2
(46-60 year)	6 (12%)	6 (12%)	p value = 0.9084
Marital Status married	38 (76%)	35 (70%)	$\chi^2 = 0.552$
Unmarried	9 (18%)	12 (24%)	df = 2
Widow/separated	3 (9%)	3 (9%)	p value = 0.7588
Occupation-housewife	33 (66%)	30 (60%)	$\chi^2 = 2.656$
Unemployed	5 (10%)	2 (4%)	df = 3
Student	3 (6%)	5 (10%)	p value = 0.4477
Professional	9 (18%)	13 (26%)	
Education-illiterate	27 (54%)	24 (48%)	$\chi^2 = 1.284$
Primary/mid/high school	12 (24%)	10 (20%)	df = 2
UG/PG	11 (22%)	16 (32%)	p value = 0.5262
Religion - Hindu	38 (76%)	40 (80%)	$\chi^2 = 0.96$
Muslim	7 (14%)	4 (8%)	df = 2
Others	5 (10%)	6 (12%)	p value = 0.6187
Family-nuclear /extended type	19 (38%)	23 (46%)	χ^2 0.657
Joint	31 (62%)	27 (54%)	df = 1 p value = 0.4176
Locality-urban	20 (40%)	26 (52%)	$\chi^2 = 1.449$
Rural	30 (60%)	24 (48%)	df = 1 p value = 0.2286

2)

Regarding all the five major domains i.e. menstrual, gynecological, obstetric, psychosexual and psychosocial conditions (Table-3 & Fig 2), prevalence of menstrual, gynecological, and psychosocial conditions in the study group were found to be significantly more than that found in the control group. Out of 50 females in the study group,19 females (38%) had some or the other menstrual problem; whereas only 7 females (14%) in the control group had these problems.(p value = 0.0062). Also 14 females (28%) in the study group suffered from gynecological conditions whereas only 6 females (12%) in the control group complaint about the gynecological symptoms. (p value = 0.0455). Similarly, 20 out of 50 females (40%) in the study

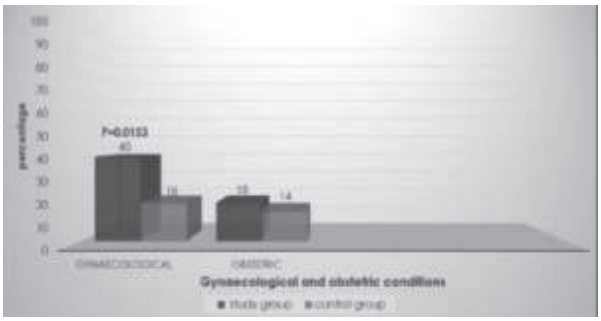

Fig-1:Bar diagram showing prevalence and comparision of gynecological and obstetric conditions between the study and control group

Table-2: Prevalence and comparison of gynecological and obstetric conditions between the study and control group

Conditions	Study group (N=50)	Control group (N=50)	χ^2	p Value
Gynecological	20 (40%)	9 (18%)	5.877	0.0153
Obstetric	9 (18%)	7 (14%)	0.298	0.5854

Table-3: Major domains, their prevalence and comparison between study and control group

Domains	Study group (N=50)	Control group (N=50)	χ^2	p Value
Menstrual	19 (38%)	7 (14%)	7.484	0.0062
Gynecological	14 (28%)	6 (12%)	4.000	0.0455
Obstetric	9 (18%)	7 (14%)	0.298	0.585
Psychosexual	12 (24%)	6 (12%)	2.439	0.1183
Psychosocial	20 (40%)	10 (20%)	4.762	0.0291

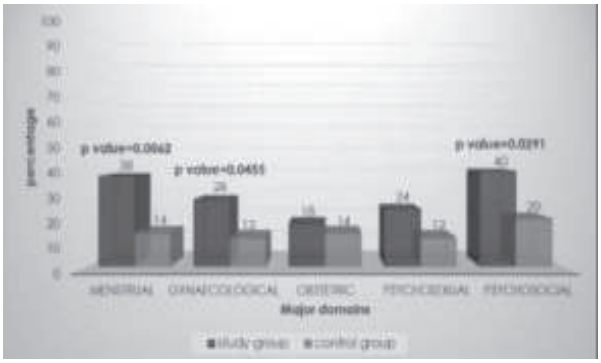

Fig-2: Bar diagram showing major domains, their prevalence and comparison between the study and the control group:

group had psychosocial problems and only 10 out of 50 females (20%) in control group had any such problem. (p value = 0.0291). Prevalence of obstetric and psychosexual conditions in study and control group was non-significant, p value for obstetric and psychosexual conditions being 0.585 and 0.1183 respectively.

Discussion

In the view of previous studies, it has been estimated that 20-25% of patients in general hospitals have individual symptom of conversion.[11] Reviewing the available western and Indian literature, hysteria is not so uncommon as it was thought to be.[12-14] About one third of female conversion patients and another 13% of normal healthy women were found to harbor this misbelief that passing white discharge per vagina was harmful to their health and that it was causing symptoms in them.[15] Chaturvedi et al., in their study found that females with somatic symptoms more commonly (3.5 times than normal healthy women) mis-attribute their symptoms to physiological vaginal discharge.[15,16]

In a large study done in Libya,[17] they looked specifically at the socio-demographic features of the individuals presenting with conversion disorder. The mean age of the first attendees in the outpatient clinic was 20.2 years, rather low compared to other studies that usually reveal a mean age of 30 to 40 years.[18-20] In present study, majority of the females were in the age group of 16-30 years, married, housewives and illiterate, coming from joint family, belonging to Hindu religion and hailing from rural area. These findings are in line with the findings of previous studies.[19,21] Majority of the patients, in one of the studies, with conversion disorder are young females, formally educated with rural background, unmarried and unemployed, having no family history of mental illness and presented through the outpatient department.[21] Another study found that the individuals with dissociative (conversion) disorder were poor, mostly illiterate, married, from a rural background, working, and Hindus.[19]

Most of the female inpatients of dissociative (conversion) disorder in the present study complaint of one or the other gynecological problems and few of them reported of obstetric problems in the past. The experience of gynecological symptoms is associated with psychological distress, particularly when no genital tract pathology is diagnosed.[8,22]. The symptoms can have deep cultural meanings[23], and may in themselves be somatic expression of depression and psychosocial distress.[8]

When females were assessed for five major domains, conditions related to menstrual, gynecological and psychosocial domains in the study group were found to be significantly more than that of the control group. Similar findings were obtained in few other previous studies.[8,15,16,22,24] This could be the conversion of menstrual, gynecological, obstetric, psychosexual and psychosocial stress which is reflected as dissociative (conversion) disorder, expressing woman's imbalance, in different domains of her life, including, body, marriage, family and household and society. Contrast findings were also found in other studies. Overall, many problems result in significant psychological stress and psychosexual morbidity, with a marked negative impact on quality of life. Distress is greater in those who are young and poor or socially disadvantaged, and who have a history of undergoing violence.[24] Premature birth and the birth of an infant with disabilities are highly distressing events that can lead to depression,[24] and sometimes conversion symptoms.

Two, among various conditions in the menstrual domain, were found to be significantly more in the study group than that found in the control group. Prevalence of menstrual symptoms was found to be 72% in study group and 48 % in the control group (p value = 0.027) and that of the post- menopausal symptoms was 18% in study group, whereas 6% in the control group (p value = 0.019).These findings are in line with the findings of other previous studies.[8,15,16,24] It would be reasonable to say that females find menstrual and postmenopausal symptoms so

stressful that conversion symptoms starts appearing.[8] No significant differences in other conditions like menstrual period irregularity, menstrual flow normalcy or missed or bleeding periods between the two groups were found.

Among the various gynecological conditions, two were found to be significantly prevalent. Firstly, PID which was prevalent in 18% females in the study group while in the control group, it was found in 2 % females (p value = 0.008). Secondly, vaginal discharge which was found to be present in 68% in the study group whereas 46 % in the control group (p value = 0.026). Research in India highlighted the association between reproductive tract infections and its related symptoms and psychological distress; and demonstrated that presence of a symptom for more than one month – most commonly vaginal discharge – and any past history of similar symptoms are likely to result in common mental disorders, including depression, anxiety and somatization disorders[9,24,25] and as pointed out by Patel and Oomman in India, the reporting of abnormal discharge is more a "somatic idiom" of depression and psychosocial distress than evidence of disease.[8]

Among the psychosocial conditions, conditions like following the restrictions such as not allowed to visit the religious places, not allowed to go to school or kitchen, not allowed to touch the water utensils, were significantly in study group as compared to control group (88% in study group and 36% in control group respectively, p value = 0.000). Also, most of the females had felt the pressure from family members or desire for the male child in the study group (66%) as compared to that of the control group (28%), which was highly significant (p value = 0.000). It is reasonable to speculate that mental health of a woman may be adversely affected by the family and social reaction to the concept of a daughter. Previous studies from across the world has mentioned the psychosocial conditions as causing distress in females. Women have attributed their psychosocial distress to pecuniary insecurity, financial and emotional responsibility for children and other family members, work burden and a strict gender-based discrimination.[23] In cultures with a strong preference for sons, giving birth to a daughter was consistently associated with depression[26-28] particularly for women who had already given birth to a daughter.[29]

Conclusion

Seeing the high prevalence of menstrual, gynecological, obstetric, psychosexual and psychosocial conditions it can be said that they may be leading to conversion symptoms and therefore every patient of dissociative (conversion) disorder should be thoroughly interviewed about the symptoms.

From the area we are hailing from, females neglect these symptoms and a very few females in our study had consulted any gynecologist for their problems. So possibility is that patients apart from dissociative conversion disorder, like anxiety disorder might also be having similar complaints or problems. So, emphasis should be laid to educate the females about these symptoms from the early age (school, mother, elders) so they can consult a gynecologist for these symptoms rather than getting stressed because of it, as these conditions could be the only factors or could be the major contributing factors causing the conversion symptoms to appear.

When it comes to the manifestations of conversion disorder, an integrated collaborative approach would be helpful for providing better services to the patients. The psychological intervention involving sex education to the girls of pubertal age, addressing her explanatory models, explaining woman about the physiological and psychological nature of vaginal discharge and her somatic symptoms, knowing her underlying stress and conflict and resolving the same, and limiting her help seeking from various doctors (i.e. doctor shopping) has to be included. It will eventually decrease the prevalence of dissociative (conversion) disorder patients due to the menstrual, gynecological, obstetric, psychosexual and psychosocial problems.

Limitations: Sample size is short so the result cannot be generalized. There is need for few more studies in different socio-cultural setups with large sample size for generalizing the result.

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Original Article

Is there a difference in the Psychological Well-being of married and unmarried Obese Adults?

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ABSTRACT

Background: *Obesity has become a major public health problem in the world. The physical and mental effects of obesity have been researched and documented extensively, however understanding obesity from a Positive Psychology approach in the Indian population has not been explored so far.* ***Objective:*** *To find out if there is any difference in the Psychological Wellbeing, of obese and non obese groups with respect to marital status.* ***Methodology****: The concept of Psychological Well-Being was explored using Ryff's Psychological Well-Being Scale to see the difference between married and unmarried obese (n=200) Indian adults and non obese (n=100) Indian adults. t-test was employed and significant differences were found for unmarried obese and non obese participants.* ***Results:*** *Findings revealed that unmarried obese adults had lower psychological well-being than unmarried non-obese adults.* ***Conclusion:*** *No causal relationship can be stated in the present study. The unmarried obese adults had lower Psychological well-being than unmarried non obese adults.*

Keywords: *Obesity, Psychological well-being, Marital status*

Introduction

Obesity has become a major public health problem in the world. The physical and mental impacts of obesity have been researched in depth as well as recorded, however from the approach of Positive Psychology there is a paucity of studies exploring obesity[1]. Hence the present study was designed to understand obesity from the perspective of Positive Psychology with Ryff's concept of Psychological Well-Being. Prior research has shown that married people are at lower risk of death and are more likely to be healthy than unmarried people[2]. Researchers also found that marriage or living with a partner was related positively to body weight and divorce was related negatively to body weight[3-6]. However both obesity and marital status have not been explored from the perspective of Positive Psychology. Hence the current study was designed to see if there is any significant difference in the psychological well-being of married and unmarried obese adults.

Methods

Objective

To find out if there is any difference in the Psychological Well- Being, of obese and non obese groups with respect to marital status.

Hypothesis

There will be significant difference in the Psychological Well-Being of obese and non obese adults with respect to marital status.

Participants/Sample

A sample size of 200 obese adults of the age group 18 to 42 years was randomly selected from

different clinics/hospitals and other areas in Delhi. A sample of 100 non obese adults of age group 18 to 42 years were also randomly selected from Delhi.

Inclusion criteria for the obese group

1. Participants who had a Body mass index of 30 or greater than 30 were included in the study after they willingly gave their consent to participate.
2. Participants of the age group 18-42 were included.

Exclusion Criteria for the obese group

1. Participants who underwent major surgery like heart, liver, kidney etc for last 3 months.
2. Participants with sub average intelligence as per the clinical interview.
3. Pregnant women or women who had given childbirth for last 6 months.
4. Participants with any history of physical, psychiatric, neurological and substance related disorders.

Inclusion Criteria for the Non Obese Group

1. Participants who had Body mass index (BMI) score of 19 to 24.9.
2. Participants who had age range of 18 to 42 years.

Exclusion Criteria for the Non Obese Group

1. Participants who underwent major surgery like heart, liver, kidney etc for last 3 months.
2. Participants who had sub average intelligence as per the clinical interview.
3. Pregnant women or women who had given childbirth for last 6 months.
4. Participants with any history of physical, psychiatric, neurological and substance related disorders.

Measures

Body mass index (BMI): BMI was calculated by dividing the weight by the height. Weight (in kg) and height (in cm) was measured.

Ryff's Psychological Well-Being Scale (PWB)[7]: The scale is the 54 item scale version that was used[3]. The scale involves items of the 6 constructs of Psychological well being which is autonomy, self acceptance, environmental mastery, personal growth, purpose in life and positive relations with others. The Inter-factor correlations of the psychological well-being constructs were sufficiently high (> 0.80). Internal consistency varied from .86 to .93 for the various dimensions.

Procedure for the obese group

The participants who met above mentioned inclusion and exclusion criteria were explained about purpose of the study. Participants who gave their written consent were selected for the study. BMI was recorded. Psychological Well-Being Scale was administered on 200 obese adults.

Procedure for the non obese group

The participants who met above mentioned inclusion and exclusion criteria were explained about purpose of the study. Participants who gave their written consent were selected for the study. BMI was recorded. Psychological Well-Being Scale was administered on 100 obese adults.

Statistical Analysis

SPSS-20 Version was used for statistical analysis. t-test was employed to know if there was a difference in the Psychological Well-Being of obese and non obese Indian adults as per marital status.

Results

Table 1 reflects the comparative mean and SD and t-test for marital status of obese and non obese group on the six sub-domains of the PWB scale- Positive Relations, Autonomy, Environmental Mastery, Personal Growth, Purpose in Life and Self Acceptance. The difference between the obese and non obese group was significant for the unmarried group for the sub domain of Positive Relations ($t = 2.46$, p .016), where the mean was lesser for the obese group (36.260 ± 8.329) than the non obese group (39.857 ± 6.737) indicating that the non obese unmarried had better positive relations than the obese unmarried. Significant difference was also there for the Autonomy sub domain ($t = 3.67$, $p < 0.001$) where the mean was lesser for the obese group (34.640 ± 5.228) than the non obese group (38.679 ± 6.003) indicating that the non obese unmarried had better autonomy than the obese unmarried. On the Environmental Mastery sub domain also there was significant difference between the obese and non obese groups ($t = 2.65$,

Table-1: Comaprison of mean, SD and t – test for Marital Status for the Obese and Non Obese groups on the Psychological Well-Being (PWB) Scale

Scores on the sub domains of PWB	Married			
	Obese Group Mean (SD) N = 150	Non Obese Group Mean (SD) N=44	t	p
PWB-Positive Relations	38.507(7.411)	37.093(5.789)	1.09	0.276
PWB-Autonomy	35.400(6.412)	35.488(6.344)	0.17	0.862
PWB-Environmental Mastery	36.850(6.338)	38.000(6.291)	1.07	0.288
PWB-Personal Growth	37.270(7.056)	37.910(6.301)	0.45	0.654
PWB-Purpose in Life	38.407(6.678)	37.349(6.043)	0.99	0.322
PWB-Self Acceptance	36.740(6.470)	36.980(5.902)	0.26	0.795
	Unmarried			
Scores on the sub Domains of PWB	Obese Group Mean (SD) N=50	Non Obese Group Mean (SD) N = 56	t	p
PWB-Positive Relations	36.260(8.329)	39.857(6.737)	2.46	0.016*
PWB-Autonomy	34.640(5.228)	38.679(6.003)	3.67	0.001**
PWB-Environmental Mastery	35.320(7.006)	38.800(6.527)	2.65	0.009**
PWB-Personal Growth	36.400(6.484)	37.770(6.617)	1.07	0.286
PWB-Purpose in Life	36.840(7.304)	37.036(6.415)	0.15	0.884
PWB-Self Acceptance	35.320(6.406)	38.880(5.230)	3.14	0.002**

** Significant at 0.01,
* Significant at 0.05

p 0.009) where the mean was lesser for the obese group (35.320 ± 7.006) than the non obese group (38.800 ± 6.527) indicating that the non obese unmarried had better environmental mastery than the obese unmarried. Significant difference was also there for the Self acceptance sub domain (t = 3.14, p 0.002) where the mean was lesser for the obese group (35.320 ± 6.406) than the non obese group (38.880 ± 5.230) indicating that the non obese unmarried had better self acceptance than the obese unmarried participants.

Discussion

The aim of the present study was to see if there is a difference in the psychological well-being of married and unmarried obese adults. For this purpose a sample of 200 obese adults (100 males and 100 females) and 100 (50 males and 50 females) non obese adults of the age group 18 to 42 years were selected. The Psychological Well-Being Scale was administered to the participants and the data was analyzed with t–test. The hypothesis of the current study was that there will be significant difference on the Psychological Well-Being of obese and non obese adults with respect to marital status.

Findings revealed that there were significant differences in the psychological well-being of unmarried obese and non obese adults and not for married obese and non obese adults. Wilson[8] found in his study that married individuals have partners with whom they can eat and hence tend to eat more often which in turn leads to weight gain. In the present study no difference in the psychological well being of married obese and non obese adults was found. It could be that the presence of a partner in life doesn't result in any significant difference in the psychological well-being of married obese adults. The interpersonal relations, autonomy, environmental mastery, personal growth, purpose in life and self acceptance are similar for married obese and non obese participants.

In the unmarried group four sub domains of the psychological well-being scale were significantly different for the obese and non obese which were Positive Relations, Autonomy, Environmental Mastery and Self Acceptance. Positive relations were significantly better for the non obese unmarried group as compared to the unmarried obese group

(p .05). Previous research study has revealed that severely obese individuals have lower support in their family relationships.[9] In the present study also this may be the reason why unmarried obese individuals may have poorer positive relations than non obese unmarried participants. Autonomy, environmental mastery and self acceptance of unmarried obese adults were poorer as compared to non obese adults. There is no prior research on this and it could be that the absence of a partner in their life affects the autonomy, environmental mastery and self acceptance of obese adults.

The hypothesis in the present study is partially accepted. The limitation of the current study was that it was not a longitudinal study where the trends of obesity or marital transitions were assessed in the psychological well being of obese adults. Future research can be designed keeping this aspect in mind as knowledge of obesity from a positive psychology approach may contribute to its better treatment.

Conclusion

No causal relationship can be stated in the present study but results in the current study revealed that unmarried obese adults had lower psychological well-being than unmarried non obese adults.

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Original Article

Purpose Orientation: Examining the sociodemographic differences among Indian Youth

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ABSTRACT

Having a purpose of life is an asset in an individual's life. It serves as a positive contributor for healthy and long life of an individual. Studies have reported the benefits of pursuing a purpose among youth, but not much is explored about the content of purpose. The current study is an attempt to understand the types of purpose the Indian youth from the Delhi -NCR rates important. It also examines the differences among gender and religion with respect to purpose orientations. The study also discusses the prevalence of each purpose orientations among the current sample.

Keywords*: Purpose in life, Purpose orientations, Indian Youth.*

Introduction

What is the purpose of life? This is one of the most radical and challenging questions humans have ever asked. Conversations about purpose had been around for as long as any of the world's religions and philosophies. No other question has stirred human hearts so deeply, for so long. Neither has any philosophy nor religion persuaded man until it has answered this crucial question. Historically speaking, the discussion pertaining to the purpose of life has grown in significance with the growth of philosophies and religions.

Finding a purpose in life; has been something which has been always there but never really looked into with scientific rigor. It has been labeled to be something too philosophical or high flown; a construct too tricky to grasp, and too abstract to be measured. Recent attempts to look into this term have brought forth the much-needed attention it deserved.

Defining Purpose in Life

It has been difficult to operationalize *Purpose in life* due to its abstract and subjective nature; the researchers had difficulty agreeing upon a definition for it. A review of research has revealed four possible definitions of purpose in life; these definitions are not only from research with adults, but also more recent work with adolescents and emerging adults. First, Ryff[1] suggests that a purposeful individual 'has goals in life and a sense of directedness; feels there is meaning to present and past life; holds beliefs that give life purpose; has aims and objectives for living'. Second, Damon[2] proposed that purpose is 'a stable and generalized intention to accomplish something that is at once meaningful to the self and of consequence to the world beyond the self'. Third, Kosine, Steger, and Duncan[3] suggest that 'purpose refers to people's identification of highly valued, over-arching goals, the attainment of which is anticipated to move people closer to achieving their true potential and bring them deep fulfillment'. According to McKnight and Kashdan[4], 'purpose is a central, self-organizing life aim that organizes and stimulates goals, manages behaviors, and provides a sense of meaning'.

For long, purpose in life and meaning in life are treated as identical constructs in the literature of research. Recently researchers have made attempts to distinguish between the two. McKnight and

Kashdan[4] in the above stated definition of purpose have also conceptualized purpose to be distinct from meaning. According to them, meaning is associated with processing and interpreting reality, while purpose is allied with motivated planning and acting. A purpose is a part of one's personal search for meaning, but it is said to comprise of an external component. Specifically, a purpose in life represents an intention to contribute to matters larger than the self. In this way, purpose is distinguished from meaning.[5]

The Positive Role of Purpose

A purpose in life represents a powerful source of long term motivation. It acts like compass, guiding young people's lives in positive directions.[6-8] As a motivator, it orients life goals and daily decisions by directing the use of personal resources, such as time, energy, and effort, toward pro-social aims. Pursuing a life purpose is a central component of many leading theories of optimal human development. Having a life purpose represents a key component of Ryff's conception of eudemonia, which emphasizes the goal of self-actualization; it signifies an important path to well-being in Seligman's conception of flourishing.[9,10]

Purpose is said to give one's life coherence, direction and meaning. It has been widely known that identifying and progressing towards a particular life aim can not only help guide actions and motivate meaningful pursuits, but it may also provide satisfaction with life, greater levels of happiness, resiliency, and psychological well-being.[1,11-15] Maintaining a meaningful purpose is associated with positive coping and decreased stress levels.[16,17] Having a purpose in life predicts more mature defense mechanisms and more mature coping strategies.[18] Purpose is also known to play a positive role in the lives of young adults. For example, theoretical research identifies purpose as a developmental asset[8] and an important component of what makes humans flourish.[19] Another important way that leading a life of purpose benefits youth is through its association with healthy identity development[7,20-22]

Purpose among Youth

A lot about purpose that has been researched is focused on adult population. But recent researchers have thrown light on its significance among young adults. Empirical researchers have established Purpose in life to be a developmental construct; it is mainly an adolescent and emerging adulthood phenomenon. Researchers have time and again proven the contribution of purpose in an emerging adult's life. It has been witnessed that encouraging young adults to find a purpose in life has advantages for both the psychosocial development of the individual and for the society.[7,23] Purpose seems to permeate a sense of worth among young people, that what they are doing is important for both the world and for their own thriving,[25] which is essential to healthy adolescent development.[26] Erikson's classic theory[22,27-28] of lifespan development suggests that during late adolescence and emerging adulthood individuals face the crisis of identity versus identity confusion. To resolve this crisis, individuals need to decide "who they are." It is during this period that individuals articulate occupational goals and reflect on what makes life meaningful. Indeed, according to Erikson,[22] resolving this crisis often involves defining one's purpose in life. Importantly, Erikson clearly states that the resolution (or lack of resolution) of one crisis directly affects all subsequent "crises." Therefore, finding a purpose for one's life should demonstrate adaptive outcomes both immediately and in the long-term. Discovering purpose is helpful in resolving identity "crises" while offering individuals a meaningful goal toward which they can direct their time, energy, and effort.[29] As a consequence of being engaged in the broader world in a personally meaningful way, individuals develop capital, or resources, that facilitate further growth. This pursuit of and commitment to a purpose is both appropriate and satisfying for most adolescents, although it can be troublesome if they have not committed by adulthood.[10,30]

Rationale of the Current Study

Having a purpose or a long-term goal is critical for optimal human development. For today's youth who is easily distracted identifying a meaningful purpose and committing to it is very essential. A lot of Western cultures have now started to identify that purpose in life as a construct could be differentiated with meaning in life on the basis of beyond self oriented goals. However, in an Indian sociocultural context where the individual is embedded in the collective culture in a significant

manner [31] a sense of strong social concern would be higher rather than individualistic striving and competition. But with the overwhelming spread of Western education and culture, increased technological sophistication, improved communication many traditional roles are changing. Shifts from joint families, independence oriented childrearing practices and modernity are observed.[32,33] With the western influences on an Indian young adult's lifestyle it becomes imperative to study the kinds of goals the young adults strive and aim for in the present era. The current study evaluates the kind of purpose endorsed by young adults. The measure employed in the study has four kinds of purpose orientations, namely – Pro social, financial, creative and personal recognition. This study attempts to understand the current situation of young adults with respect to their purpose orientation. The study aims to examine the prevalence of different kinds of purpose orientation amongst the Indian youth. It further aims to examine whether there are any differences in the purpose orientations based on religions and gender.

Method

Participants

The data set used in this study was part of a larger study exploring the role of different religious affiliation in purpose of life. 427 (213 males, 214 females) college students pursuing graduation in private and central universities of Delhi-NCR participated in the current study. Their mean age was 19.97 years (SD = 1.54). Descriptive statistics of the participants is illustrated in the table below.

Table-1: Summary of Descriptive

Variable	N	Percentage
Gender		
Male	213	50.1
Female	214	49.9
Age		
17	4	.9
18	70	16.4
19	95	22.2
20	124	29
21	74	17.3
22	57	13.5
Religion		
Hindu	233	54.6
Islam	194	45.4

Measure

Purpose Orientations Scale[34]: This scale was developed using the life-goal items developed and refined by the Higher Education Research Institute (HERI) at UCLA. Participants rated the personal importance of 16 different life-goal items on a scale from 1 (Not important) to 4 (Essential). The first factor was labeled a *pro-social orientation* because it was defined by one's propensity to help others and influence the societal structure. The second factor, a *financial orientation*, was defined by goals of financial well-being and administrative success. The third factor, a *creative orientation*, was defined by artistic goals and a propensity for originality. The fourth factor, a *personal recognition* orientation, was defined by, one's desire for recognition and respect from colleagues. Socio Demographic Details was obtained from the participants.

Procedure

The questionnaire was distributed among undergraduate students from different colleges in Delhi-NCR. Various colleges affiliated to private and government affiliated universities were visited for data collection. Instructions regarding the questionnaire were givento the participants. The participants were informed that their participation is voluntary and their responses would be confidential and anonymity would be maintained. A written consent was taken by the participants. After completion of the form, the participants were debriefed about the nature of the study and were thanked for their valuable time.

Results

Statistical Package for Social Sciences (SPSS) version 21.0 was used for analysis of data. Descriptive statistics were computed using crosstabs and further t-Test and MANOVA were computed to assess whether gender and religion contribute to any difference in the purpose orientation among Indian youth.

Reliability of the Scale

The Reliabilities for the four purpose orientations on the current sample were as follows:

Pro-social (six items, $\alpha = .76$); Financial (three items, $\alpha = .60$); Creative (three items, $\alpha = .56$), Personal recognition (four items, $\alpha = .56$)

Table-2: Descriptive analysis of the measured indicators

	N	Minimum	Maximum	Mean	Std. Deviation
Age	424	17	32	19.97	1.617
Total PR	427	4	16	10.43	2.536
Total Cr	427	3	12	7.00	2.050
Total PS	427	8	24	17.44	3.520
Total Fin	427	3	12	8.52	2.103

PR – Personal Recognition; Cr – Creativity; PS ---– Pro Social; Fin - Financial

Cross tabulations revealed the percentage population falling under the low, medium and high levels of the four purpose orientations. The 25th, 50th and 75th percentiles were calculated. On the basis of which, three levels low, medium and high categories were decided. The scores below 25th percentile were categorized as low purpose orientation, the scores between 25th to 75th percentiles were categorized as medium purpose orientation and scores above 75th percentile were labeled as high purpose orientation.

In the current sample, 10.6% females had high score on pro-social orientation whereas only 9% males scored high on pro social orientation. However, only 7.5% females scored high on financial purpose orientation whereas 10.4% males scored high on financial purpose orientation. In terms of creative orientation, 10.8% females scored high

Table-3: Cross tabulation of purpose orientation across Gender

			Gender		
			Female	Male	Total
Pro Social Orientation	Low	Count	34	44	78
		% of Total	8.0%	10.4%	18.4%
	Medium	Count	135	128	263
		% of Total	31.8%	30.2%	62.0%
	High	Count	45	38	83
		% of Total	10.6%	9.0%	19.6%
Total		Count	214	210	424
		% of Total	50.5%	49.5%	100.0%
Financial Orientation	Low	Count	47	33	80
		% of Total	11.1%	7.8%	18.9%
	Medium	Count	135	133	268
		% of Total	31.8%	31.4%	63.2%
	High	Count	32	44	76
		% of Total	7.5%	10.4%	17.9%
Total		Count	214	210	424
		% of Total	50.5%	49.5%	100.0%
Creative Orientation	Low	Count	48	50	98
		% of Total	11.3%	11.8%	23.1%
	Medium	Count	120	110	230
		% of Total	28.3%	25.9%	54.2%
	High	Count	46	50	96
		% of Total	10.8%	11.8%	22.6%
Total		Count	214	210	424
		% of Total	50.5%	49.5%	100.0%
Personal Recognition	Low	Count	47	47	94
		% of Total	11.1%	11.1%	22.2%
	Medium	Count	128	118	246
		% of Total	30.2%	27.8%	58.0%
	High	Count	39	45	84
		% of Total	9.2%	10.6%	19.8%
Total		Count	214	210	424
		% of Total	50.5%	49.5%	100.0%

whereas 11.8% males had a high creative purpose orientation. The fourth purpose orientation was personal recognition, on this scale, 9.2% females and 10.6% males had a high score.

We further wanted to assess that whether the purpose orientations differ due to gender or religion. An independent-samples t-test was conducted to compare Pro-social, financial, creative and personal recognition purpose orientation among male and female young adults. The t test table is given below.

An independent samples t-test was conducted for the above mentioned four purpose orientations among Hindu and Muslim young adults. The results table is given below:

The results reveal statistically significant differences among Hindu (M = 16.97, SD = 3.39) and Muslim (M = 18, SD = 3.59) students on pro-social purpose orientation (t = 3.07, p = 0.03). Higher mean of Muslims indicates that Muslim students have higher pro social purpose orientation as

Table-4: Comparison of mean scores of Purpose Orientations across Gender

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Total Pro Social	Equal variances assumed	.238	.626	1.39	42	.16	.476	.340	-.193	1.145
	Equal variances not assumed			1.39	424.45	.16	.476	.340	-.193	1.145
Total Financial	Equal variances assumed	.465	.496	1.99	425	**.04***	-.405	.203	-.804	-.007
	Equal variances not assumed			1.99	422.77	.04	-.405	.203	-.804	-.006
Total Creativity	Equal variances assumed	.016	.900	.33	425	.74	.066	.199	-.325	.456
	Equal variances not assumed			.33	424.97	.74	.066	.199	-.325	.456
Total PR	Equal variances assumed	.073	.787	1.69	425	.09**	-.414	.245	-.896	.067
	Equal variances not assumed			1.69	424.86	.09	-.414	.245	-.896	.067

The results reveal a significant difference among males (M = 8.72, SD = 2.16) and females (M = 8.32, SD = 2.02) in the scores of financial purpose orientation. $t = 1.99$; $p < 0.05$. A higher mean value of male participants indicates that males have higher financial oriented purposes as compared to females. Effect size was calculated using Cohen's d = 0.2. Gender also seems to be approaching statistical significant difference on the scores of Personal recognition purpose orientation, $t = 1.69$, $p = .09$. Males obtained a slightly higher mean value (M = 10.63, SD = 2.54) as compared to females (M = 10.22, SD = 2.51). Effect size = 0.16.

compared to Hindu students. The effect size was calculated using cohen's D. The value of cohen's D = 0.3.The results also indicate a significant difference among Hindu (M = 10.12, SD = 2.46) and Muslim (M = 10.80, SD = 2.57) students across personal recognition purpose orientation, $t = 2.61$, $p = .009$.Higher mean of Muslim studentsas compared to Hindu students indicate that Muslim students have higher personal recognition orientation purpose as compared to Hindu students. Effect Size = .56.

MANOVA tested the effect of gender and religion on the pro social purpose orientation, financial purpose orientation and personal

Table 5: Comparison of mean scores of Purpose Orientation across Religion

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Total Pro Social	Equal variances assumed	1.328	.250	**3.07**	405	**.002****	-1.070	.348	-1.755	-.386
	Equal variances not assumed			3.03	349.535	.003	-1.070	.353	-1.764	-.376
Total Financial	Equal variances assumed	.007	.935	.81	405	.417	-.170	.209	-.581	.242
	Equal variances not assumed			.81	359.209	.421	-.170	.211	-.584	.245
Total Creativity	Equal variances assumed	1.205	.273	.49	405	.620	-.101	.204	-.503	.300
	Equal variances not assumed			.49	351.610	.624	-.101	.207	-.508	.305
Total PR	Equal variances assumed	2.326	.128	2.6	405	.009**	-.657	.252	-1.152	-.163
	Equal variances not assumed			2.59	358.699	.010	-.657	.253	-1.156	-.159

recognition purpose orientation. The results reveal a significant interaction effect of gender and religion on the purpose orientation. (F = 3.123, p = 0.015) The table below illustrates the multivariate tests score.

Table-6: Multivariate Tests

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Sq.
Gender	Wilks' Lambda	.968	3.481[b]	4.000	420.000	.008	.032
Religion	Wilks' Lambda	.970	3.193[b]	4.000	420.000	.013	.030
Gender* Religion	Wilks' Lambda	.971	3.123[b]	4.000	420.000	.015	.029

a. Design: GenderT + ReligionT + GenderT * ReligionT

b. Exact statistic

The multivariate tests demonstrate a statistically significant interaction between gender and religion on the combined dependent variables, (F = 3.12, p = .015' Wilks' Lambda = .971). The multivariate tests also showsignificant results for both the independent variables Gender (F = 3.48, p = .008; Wilks' Lambda = .968) and Religion (F = 3.19, p = .013; Wilks' Lambda = .97).

Univariate tests revealed a significant interaction effect for creative purpose orientation.Table reports the means for the interactions. It was observed that Hindu students female participants (N = 7.15) scored higher on creative purpose as compared to Hindu male students (N = 6.70). However, among Muslim students male participants (N = 7.33) scored higher on creative purpose as compared to female Muslim students (N = 6.94).

Discussion

Many previous researches have emphasized upon the importance of identifying a purpose in life. A purpose in life is considered to be a critical component for optimal youth development[20]. Plethora of empirical studies have assessed purpose in life through various methodologies.[35-37] However, most of the studies have measured the extent to

Table 7: Tests of Between-Subjects Effects

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial eta squared
GenderT	Total Pro Social	6.717	1	6.717	.553	.458	.001
	Total Financial	25.195	1	25.195	5.746	.017	.013
	Total Creativity	.153	1	.153	.037	.848	.000
	Total PR	36.494	1	36.494	5.848	.016	.014
ReligionT	Total Pro Social	86.883	1	86.883	7.147	.008	.017
	Total Financial	10.779	1	10.779	2.458	.118	.006
	Total Creativity	5.594	1	5.594	1.340	.248	.003
	Total PR	69.056	1	69.056	11.067	.001	.025
GenderT * ReligionT	Total Pro Social	18.918	1	18.918	1.556	.213	.004
	Total Financial	1.909	1	1.909	.435	.510	.001
	Total Creativity	19.145	1	19.145	4.586	.033	.011
	Total PR	10.266	1	10.266	1.645	.200	.004

which an individual has a purpose in life but not many have tapped the content of purpose. Damon and Bronk have highlighted the need of evaluating the content of purpose.[38] The current study thus attempted to understand the type and content of purpose the Indian youth strive for. It also attempts to explore how youth purpose differs across gender and religion. The study employed a measure which assessed the importance of different kinds of purpose in an individual's life. There were namely four different kinds of purpose orientations tapped by the measure; Pro-social, financial, creative and personal recognition.

The cross tabulations revealed that 19.6% of total sample endorsed high pro social purpose. Things like participating in community programs, helping others in difficulty etc., comprised of pro social purpose orientation. Financial goals, such as being financially well off were endorsed by 17.9% of the total sample. 22.6% of the sample endorsed a high creative purpose. The sample considered creating artistic work, accomplishing in performing arts as important. Personal recognition purpose was considered important by 19.8% of population.

Further, on conducting t-test and ANOVA, it was observed that males and females did not have any significant difference in terms of their preference towards pro social purpose. However, religion did tend to cause difference in the pro social purpose orientation, with Muslims scoring higher in their pro social purpose than Hindus. Effect size was calculated, Cohen's d = 0.3. it was medium effect size. This finding could be explained in terms of the meta analytic review that religious people are more pro social and have concern for the welfare of others.[39] Muslims are more religious as compared to Hindus as reported by studies conducted by Begum and Osmany,[40] Tausch, Hewstone and Roy[41] and Hassan and Khalique.[42] Thus, we can conclude that Muslim participants were higher on pro social goals as they are more religious as compared to Hindu participants.

Males scored significantly higher on financial purpose as compared to females. The difference could be attributed to the traditional gender role of a male being a sole bread earner thus striving more for financial goals. On the other hand, no such difference was seen among Hindus and Muslims on financial purpose.

Creative goals though were endorsed highly by the current sample; it neither differed across gender nor among religion. However a significant interaction effect for creative purpose was revealed. It was observed that female Hindus rated creative purpose as more important as compared to their male counterparts whereas Muslim males considered creative goals more important as compared to Muslim females. It means that Hindu females and Muslim males rated goals pertaining to writing original work, accomplishing in performing arts and creating artistic work as important as their respective counterparts. This finding could be attributed to the differences among Hindu and Muslim culture. Performing arts is an expression of Hindu culture. In earlier times, learning music required one to be born in a specific kind of a family. Things have changed in the present time but even today the girls in the family are encouraged to learn some form of

classical dance or music in order to be connected to the culture. However, in Islam, women are not encouraged much for performing arts due to religious norms. Personal recognition goals were endorsed more by males than females and differences were seen among Hindu and Muslim students as well, with Muslim students high on personal recognition goals as compared to Hindu students. This finding is supported by a study conducted by Mehta[43] which found that need for achievement was highest among socially disadvantaged adolescents. In India, Muslim students hold a minority status and thus often have a feeling of being at social disadvantage. Thus, the finding of the current study could be explained in terms of the findings by Mehta[43]. More needs to be explored on this aspect in future studies.

Future researches can explore in detail the differences in purpose orientation on the basis of their personality constructs as that could throw light on the preferences of purpose orientation accurately as findings on the basis of gender and religion could not be generalized in a small sample which is constricted to a particular geographical area.

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Original Article

Role of Self-efficacy in Building Resilience among Institutionalized Children of Kashmir

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ABSTRACT

Background: *There is sufficient evidence indicating that self-efficacy is one of the resilience factors plays an important role during the times of adversity and vulnerability. It is a clear self-evaluative belief leading to regulate human functioning and cognitive satisfaction. The study investigated the nature of the association between general self-efficacy (GSE) and resilience.* ***Material and Method:*** *Institutionalized children (N=300) who were exposed to an adverse situation in Kashmir constituted as the sample of the study. Self efficacy was measured by GSE scale and resilience was assessed with the help of with the help of Wagnild & Young scale.* ***Results:*** *GSE was correlated with ($r = .431$, $p < .001$) and a significant predictor ($\Delta R = .43$, $\Delta R2 = .186$, $F (1, 279) = 63.7$, $p < .001$.) of resilience and orphan children exhibit resilience when responding to adversities and vulnerabilities.* ***Conclusion:*** *Identifying construct for example self-efficacy that is related to resilience establish the precise nature of how self-efficacy plays the role in building resilience will assist the development of intervention promoting resilience in children.*

Key Words: *Self-efficacy, Resilience, Institutional Children.*

Introduction

There is sufficient evidence indicating that self-efficacy is one of the resilience factors playing an important role in the times of adversity and vulnerability. This is a clear self-evaluative belief among institutionalized children leading to regulate human functioning and cognitive satisfaction when perceiving efficient in performance likely to apply more various thinking styles.[1,2] Research evidence indicated that adolescents valued themselves moderately able to cope with adversity, adapt themselves in a new and unfamiliar environment and perceived themselves as highly able to cope with demands[3.] Self-efficacy is referred to both the ability to successfully cope with change, misfortune or adversity[4,5] and dynamic process of overcoming the negative effects of risk experience with positive outcomes[6] and avoiding the negative trajectories associated with these risks[7]. The concept of self-efficacy according to Bandura[8] was defined as the belief of a person in his or her ability to organize and execute certain behaviors that are necessary in order to produce given attainments. The efficacy beliefs influence the type of activity orphan children choose to engage in the levels of effort they spend to and their perseverance in the face of adversities suggested the relationships between beliefs concerning personal ability in a specific task and the concrete realization of this task.

Resilience

Resilience is a complex multi-faceted construct refers an ability among orphans to handle environmental demands without experiencing negative effects of orphanhood. In psychology, resilience is defined as 'the general capacity for flexible and resourceful adaptation to external and internal stressors[9] associated with increased quality of life, wellbeing and functional capacity in times of

adversity.[10] According to Gilligan[11] resilient child is a child who does better than they ought to, bearing in mind what has happened to them. Resilient children were often found to use different types of thinking styles. They are highly efficient both in general and scholastic context[12] and highly elusive and highly diverse discussed as inferring hardiness, toughness, and resistance, along with somewhat paradoxically elasticity and flexibility.[13] Several researchers found that resilient children are better to coping with difficulties and adopting the hardiness in traumatic experiences and using problem solving strategies[14] because Resilience mediated the negative association between emotional intelligence and psychological distress and highlighting the importance of inter and intra-individual emotional competencies in promoting resilience and enhancing well-being.[15] Resilience is both multi-faceted and multi-leveled. It is described by Gilligan[11] and Connor[16] a set of qualities that help a person to withstand many of the negative effects of adversity and a potential to exhibit resourcefulness by using internal and external resources in response to different contextual and developmental challenges.[17] Abiola and colleagues[18] offer a full account in terms of inner strength, competence, optimism, flexibility, and the ability to cope effectively when faced with adversity, minimizing the impact of risk factors, such as stressful life events enhancing the protective factors, such as optimism, social support, and active coping that increase people's ability to deal with life's challenges.

Self-efficacy and Resilience

Like resilience, self-efficacy is context specific and seems particularly important when individuals face adversity, when positive self-efficacy beliefs are associated with increased motivation and perseverance[19,20] and an increased likelihood of rejecting negative thoughts regarding own capabilities.[21] Self-efficacy as an important characteristic that distinguished resilient and non-resilient children[22] and is considered to be the foundation of human agency[23] and is referred to as an important protective factor regulating human functioning and emotional wellbeing through cognitive, motivational, affective, and selective processes. Self-efficacy, planning, persistence, anxiety, and uncertain control were confirmed predictors of resilience.[24] The proposes that resilience research needs to examine indicators of resiliency in order to identify what processes can promote protective mechanisms and calls for more affective and motivational training for adolescents to assess their impact on their affective and motivational outcomes.[25]

Material and Method

Sample

The participants for the present study were drawn from the states different orphanages of both male and female, having more than a year of experience in the following placement. The age range of the participants, was from 13 to 18 years (Mean = 8.43, SD = .49).

Tools used

General Self-efficacy scale (GSE): This is 10 items, context specific scale measuring adolescents General Self-efficacy developed by Schwarzer and Jerusalem.[26] For example one of an item in this scale is 'I can always manage to solve difficult problems if I try hard enough'. Items are assessed on four point scale ranging from not at all true to exactly true.

Reliability Cronbach's Alpha for the measure of present data was calculated as .67 preferably closer to .90.

Resilience Scale: This is 25 items, context specific scale measuring adolescents Resilience developed by Wagnild[27]. For example one of an item in this scale is 'I have enough energy to do what I have to do.' Items are assessed on a seven-point response scale, ranging from 'strongly disagree' to 'strongly agree' with higher scores representing greater resilience to stress.

Reliability Cronbach's Alpha for the measure of present data was calculated as .87 preferably closer to .90.

Procedure

The data of the present study was collected in small groups. Before administering the scales, the investigator established rapport to the subjects and explained purpose of investigation to them. Participants were assured that their responses will be kept strictly confidential. Participants took 10-20 minutes time in completing the scales. After collect data with effort, they were thanked for their participation and

cooperation.

Results

Table-1. Pearson's coefficient of Correlation on scores of Self-efficacy and Resilience

Variable	N	Mean	SD	Resilience
Self-efficacy	300	31.93	4.29	**.431****

*P < .05,** p < .001

In table-1 Pearson's coefficient of correlation was used to examine the relationship between scores of self-efficacy and resilience. Results revealed significant positive association between self-efficacy and resilience (r = .431, p < .001).

Linear regression analysis revealed general self-efficacy as a significant predictor of resilience and shows positive and significant relation with resilience. It was indicated that orphans with high level of self-efficacy are more resilient as compared to the orphans with low levels of resilience. Further it was revealed that orphans experienced high level of resilience only when they felt about themselves to be able to cope with. These findings are in the lines with the study done by Yendork and Somhlaba[29] have studied that the influence of self-efficacy and stress experienced children living in the orphanage showed high level of self-efficacy and reveals self-efficacy a positive predictor of resilience.

Table-2 Linear Regression analysis predicting Resilience from Self-efficacy

R	R Square	Adjusted R2	Std. error of estimate	F	Significance
.43	.186	.183	15.17	63.70	**.000**
Predictor		**Standardized Beta**	**t-value**	**Significance**	
Self-efficacy		.431	7.98	**.000**	

Dependent variable-self-efficacy

In table-2, Linear Regression analysis revealed that resilience shows significant contribution on self-efficacy. In explaining scores on resilience ΔR = .43, $\Delta R2$ = .186, F (1, 279) = 63.7, p < .001. These variables jointly explained 19% variance in the scores on Resilience. Self-efficacy was found positively and significantly related to Resilience (β = .43, t = 7.98, p < .001) indicated that orphans with high level of self-efficacy were more resilience as compared to the lower level of self-efficacy.

Discussion

Present study wanted to find out the role of self-efficacy in building resilience among Institutionalized Children of Kashmir.

The findings obtained from the scores of present study revealed positive association between self-efficacy and resilience means that self-efficacy is directly proportional to resilience among orphan children. Present study was supported by the previous finding of Hinz et al[28] have found that general self-efficacy was moderately to highly associated with resilience.

Conclusion

Institutionalized children with high level of self-efficacy can easily understand the meaning of their life that can be more meaningful to others because self-efficacy is not only based on competence but behavioral and prospective as well. Self-efficacy beliefs drive persons to strive proactively for goals and mold their own future [30]. Orphan once go through the high levels of resilience gains strength to respond the stress in various domains of life.

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Original Article

Coping Styles among Caregivers of Patients with Epilepsy: A Gender Based Study

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ABSTRACT

Introduction*: Epilepsy is a disorder associated with neurobiological, cognitive, psychological, and social consequences. The coping styles among caregivers influence the coping and quality of life of patients with epilepsy.* ***Aim****: This study aims to assess the effect of the gender of the patient with epilepsy on the coping strategies used by their caregivers..* ***Methods****: Study was conducted in psychiatric out-patient unit of Ranchi Institute of Neuro-Psychiatry and Allied Sciences (RINPAS). 60 samples, caregivers of 30-30 (male and female) were selected for interview. Purposive sampling was applied. Tool used are socio-demographic details of the participants, ways of coping scale- Lazarus and Folkman (66 items).* ***Results****: Most of the patients were male (56.7% and 70%) in the both groups. There were no significant differences found in any socio demographic variables in the both groups. Majority of male caregivers were belonged to nuclear family (53%) and female caregivers from joint family (60%) respectively. However, majority of the caregivers were belonged to Hindu religion (46% and 50%) in the both groups.The caregivers of female patients with epilepsy had poor coping in the domains- confronting, self-controlling, seeking social support, accepting responsibility, escape avoidance, plan full problem solving, positive reappraisal and total coping than caregivers of male patients with epilepsy.* ***Conclusion:*** *Coping of the caregivers should be taken into account in the overall treatment planning of the patients with epilepsy.*

Keywords*: Epilepsy, Caregivers, Coping style*

Introduction

An epileptic seizure is a transient occurrence of signs and/or symptoms due to abnormal excessive or synchronous neuronal activity in the brain. Epilepsy is a disorder of the brain characterized by an enduring predisposition to generate epileptic seizures and is associated with neurobiological, cognitive, psychological, and social consequences. The definition of epilepsy requires the occurrence of at least one epileptic seizure.[1]

Coping strategies refer to the specific efforts, both behavioral and psychological, that people employ to master, tolerate, reduce, or minimize stressful events. "Coping can be defined as an effort to manage and overcome demands and critical events that pose a challenge, threat, harm, loss, or benefit to a person".[2] Coping was pictured by Birkeland & Natvig,[3] from two angles, first as a personality trait and second as a process changing in relation to current situation. Coping definition is multi-dimensional depending on the situation at hand, possibility to adapt and the available resources. It could be a response to medical, biological or psychosocial stressors regarding problem solving and emotion focused.[4] Van den wijngaart[5] conducted a study on positive coping styles and level of care

giver's burden and suggested that caregivers who have more positive coping style are more likely to have a reduced level of burden.

In a study on psychiatric patients and their caregivers Di Mattei et al[6] concluded that caregivers who used more problem solving coping strategies has less stress than caregivers that used emotional focused coping methods. Various studies have reported significant caregiver burden in epilepsy. Yusuf et al[7] in a study on 166 caregivers of patients with epilepsy reported emotional distress in 109 (65.7%) of them. The study also showed a positive association between the level of emotional distress experienced by the caregiver of the patients and male sex[7]. Studies have also shown a significant association between health related quality of life of the patient and their caregivers and improving the health related quality of life of the caregivers through coping mechanism might have a significant impact on the quality of life of the patient.[8]

Similar study has also shown the better coping among female caregivers of epileptic patients. Female caregivers of patients with epilepsy use emotion focussed coping strategies as compared to their male counterparts and it has been shown to result in worse outcome.[9] Hence recognizing personal coping styles of both patient and caregiver should be part of a patient-oriented approach in treatment. While studies has been conducted to assess the coping strategies in male and female caregivers, no study to the authors knowledge has been conducted examining the effect of gender of the epilepsy patient on the coping mechanisms used by the caregivers.

Aim: This study aims to assess the effect of gender of the patient with epilepsy on the coping strategies used by the caregivers.

Methodology

Study was conducted at Ranchi Institute of Neuro-Psychiatry and Allied Sciences (RINPAS). Purposive sampling technique was used and consecutive patients with epilepsy and their caregivers, diagnosed by diagnostic criteria for research ICD-10, visiting neurology outpatient department of RINPAS were considered for the study. Written informed consent was taken from the patients and their caregivers. Detailed assessment was carried on a semi structured proforma in which the socio-demographic details of the patients and their caregivers were recorded. Detailed clinical history, physical examination and relevant investigations were carried out of each patient and their caregivers to rule out any medical illness. Detailed mental status examination was undertaken of each patient and their caregivers to identify any co-morbid psychiatric morbidity. On the basis of inclusion and exclusion criteria 30 male and 30 female patients and their respective caregivers were inducted in the study.

Inclusion Criteria for Patients with Epilepsy:

- Diagnosed as epilepsy according to diagnostic criteria for research ICD-10
- Age 18-45 years.
- Duration of illness 2 years or above.

Exclusion Criteria for Patients with Epilepsy

- Any history of significant physical illness.
- Any history of psychiatric and or other neurological co morbidity.
- Patients with intellectual disability

Inclusion Criteria for Caregivers

- Primary caregiver of the patients- parents, spouse, siblings and children.
- Either male or female caregiver who were involved in care giving and staying continuously with patient for at least 2 year.
- Educated up to primary level and above.
- Written consent given by the patients and their caregivers.

Exclusion Criteria for Caregivers

- Any history of major physical illness.
- Any history of psychiatric and neurological illness and substance dependency.
- Any history of personality disorder.
- Intellectual disability.

Tool

1. Socio-demographic details of the participants (patients and their caregivers) were recorded on a semi structured proforma.
2. Ways of coping scale- Lazarus and Folkman 66 items ways of coping scale was used.[10] It is a 4 points Likert scale .The questions of the scale are divided to assess the following 8 areas of coping: (1) Confronting

coping (2) Distancing (3) Self controlling (4) Seeking social support (5) Accepting responsibility (6) Escape avoidance (7) Plan full problem solving and (8) Positive re-appraisal.

Results

Table-1 describes the socio demographic variable of male and female patients with epilepsy. The X^2 test was used to compare the composition of the categorical demographic variables. Majority of the patients were educated from primary to metric level (40% and 40%) in the both groups. Most of the patients were male (56.7% and 70%) in the both

Table-1: Socio-demographic variables of male and female of patients with epilepsy

Variables		Group		df	X^2	p
		Male N=30 (n=%)	Female N=30 (n=%)			
Education of the patients	Primary	5 (16.7)	7 (23.3)	3	3.711	.204
	Primary to metric	12 (40)	12 (40)			
	Intermediate to graduate	6 (20)	9 (30)			
	Post-graduation	7 (23.3)	2 (6.7)			
Gender of the caregivers	Male	17 (56.7)	21 (70)	1	1.148	.248
	Female	13 (43.3)	09 (30)			
Occupation of the patients	Unemployed	17 (56.7)	20 (66.7)	1	0.635	.426
	Employed	13 (43.3)	10 (33.3)			
Marital status of the patients	Married	18 (60)	18 (60)	1	.000	1.000
	Unmarried	12 (40)	12 (40)			

Table-2: Socio-demographic variables of caregiver's of male and female of the patients with epilepsy

Variables	Group	Male N = 30 (n = %)	Female N = 30 (n = %)	df	X^2	p
Ethnicity	Tribal	18 (60%)	18 (60%)	1	0.00	1.00
	Non tribal	12 (40%)	12 (40%)			
Education of the caregivers	Primary	16 (53%)	10 (33%)	2	3.10	0.207
	Primary to metric	11 (37%)	13 (42%)			
	Intermediate to graduate	3 (10%)	7 (23%)			
Occupation of the caregivers	Unemployed	4 (13%)	14 (47%)	2	11.91	0.003**
	Student	11 (36.6%)	12 (40%)			
	Service/self employed	15 (50%)	4 (13%)			
Domicile	Rural	14 (47%)	16 (53%)	1	0.26	0.606
	Urban	16 (53%)	14 (47%)			
Duration of staying with the patients	≤ 2 year	2 (6%)	28 (94%)	1	0.35	0.55
	> 2 year	1 (3%)	29 (97%)			
Family income	< 0-5000	12 (40%)	16 (53%)	2	1.23	0.538
	5001-10000	13 (43%)	11 (37%)			
	10001 and above	5 (16%)	3 (10%)			
Family type	Nuclear	16 (53%)	12 (40%)	1	1.07	0.301
	Joint	14 (47%)	18 (60%)			
Religion	Hindu	14 (46%)	15 (50%)	3	1.52	0.67
	Muslim	7 (23%)	7 (23%)			
	Christian	7 (23%)	4 (13%)			
	Sikh	2 (6%)	4 (13%)			
Relationship with the patient	Spouse	12 (40%)	10 (33%)	2	0.36	0.834
	Sibling	10 (33%)	12 (40%)			
	Parent	8 (26%)	8 (26%)			

groups. However, Majority of the patients were unemployed (56.7% and 66.7%) in the both groups. Marital status of the patients indicated that most of the patients were married (60% and 60%) in the both groups. However there were no significant differences found in any socio demographic variables in the both groups.

Table-2 describes the socio demographic variable of caregiver's male and female patients with epilepsy. The X^2 test was used to compare the composition of the categorical demographic variables. Majority of the caregivers belonged to tribal community (60% and 60%) in the both groups. Most of the caregivers were educated up to primary level (53%) in the male group and primary to metric level (42%) in the female group. However, there was significant difference found with regards to occupation of caregivers in the both groups. Majority of the male caregivers were belonged to urban background (53%) and female caregivers to rural background (53%) respectively. Duration of the staying of patients with female caregivers was more than 2 year (97%). Results also indicated that family income of the male caregivers was Rs. 5001 to 10000 (43%) and female caregiver was less than Rs. 5000 (53%). Majority of male caregivers were belonged to nuclear family (53%) and female caregivers from joint family (60%) respectively. However, majority of the caregivers were belonged to Hindu religion (46% and 50%) in the both groups.

Table-3 describes the age of the caregivers and age of the patients of the male and female patients with epilepsy. The mean age of the male caregivers and female caregivers of patients with epilepsy (29.87 ± 6.90 and 33.7 ± 7.30) was found respectively. Result also indicated that the mean age of the male patients with epilepsy was (27.60 ± 4.58) and female patients with epilepsy were (25.66 ± 4.57).

Table-4 shows that caregivers of female patients with epilepsy had poor coping in the domains confrontive, self-controlling, seeking social support, accepting responsibility, escape avoidance , plan full problem solving, positive reappraisal and total coping than caregivers of male patients with epilepsy.

Table-3: Comparison of socio demographic variables of patients and their caregivers of male and female with epilepsy

Variables	Group		Df	T	p
	Male N = 30 (Mean ± SD)	Female N = 30 (Mean ± SD)			
Age of the caregivers	29.87 ±6.90	33.77 ±7.30	58	1.225	0.905
Age of the patients	27.60 ± 4.58	25.66 ± 4.57	58	1.635	0.107

Table-4 Comparison between caregivers of male and female patients with epilepsy in term of Coping and its domains

Variable	Group		Df	t
	Male (N = 30) Mean ± SD	Female (N = 30) Mean ± SD		
Confrontive	9.13 ± 2.5	6.44 ± 1.9	58	4.68*
Distancing	11.00 ± 2.1	9.50 ± 2.3	58	2.34
Self Controlling	14.32 ± 2.5	10.11 ± 2.7	58	5.90*
Seeking Social Support	11.22 ± 3.0	7.80 ± 1.9	58	5.17*
Accepting Responsibility	7.30 ± 1.9	6.10 ± 1.5	58	2.99*
Escape Avoidance	15.74 ± 3.61	9.60 ± 2.8	58	7.37*
Plan full Problem Solving	11.23 ± 3.7	9.12 ± 3.0	58	2.49*
Positive re-appraisal	12.8 ± 3.23	8.23 ± 3.2	58	5.50*
Total Coping	76.65 ± 9.6	62.77 ± 6.6	58	6.65*

* Statistically significant at $P < 0.05$

Discussion

The results of the present study showed that the caregivers of male and female patients with epilepsy were similar in all respects expect occupation in which there were disproportionately greater number of unemployed caregivers of female epilepsy patients. This finding have important implication as unemployment of caregivers could adversely impact the management of epilepsy in female patients who are stigmatised in developing nation like India.[11]The mean age of caregivers of male and female patients were 29 and 33 years respectively. Similar results were reported in a studyby Karim et al[12] which showed mean age of caregivers of persons with Epilepsy to be 36. This is the most productive age group a person and bearing responsibility of caring a patient with epilepsy can take a heavy toll on the caregiver.

Studies have shown Individual coping style is more important to the lives of patients with epilepsy than 'objective' seizure-related facts. The important relationship between individual coping style and quality of life in patients with epilepsy and their caregivers has been extensively studied and this relationship has been found to be consistent[13]. Other studies have pointed out that Caregivers' individual interpretation of their situation had a more significant impact on well-being than objective disease characteristics.[14] Visser-Meily et al.[15] found that 15–27% of variance in psychological functioning of spouses of stroke patients could be explained by coping strategies.

The present study emphasised the importance of coping study among the caregivers of patient with epilepsy. Coping style of the caregivers and the family plays a very important role in determining the quality of life of the patient. Some study suggests that coping style to be more important factor than the objective disease characteristic.[16] In the present study caregivers of female patients with epilepsy had poor coping on the following domains-confronting, self-controlling, seeking social support, accepting responsibility, escape avoidance, plan full problem solving, positive reappraisal and total coping than caregivers of male patients with epilepsy. Earlier studies have also indicated that caregivers of female patients with epilepsy had poor coping than caregivers of male patients with epilepsy.[16,17]

Limitations

The limitations of present study are as follows:

1. The sample size of study was small and hence the generalization of the result remains doubtful.
2. The study was cross sectional study design.
3. The samples were selected by using purposive sampling technique.
4. Few other parameters like stigma, expressed emotions, and family interactions pattern were not measured.

Conclusion

Present study is based on cross sectional comparative study designed to assess coping between caregivers of male and female patients with epilepsy. The coping is important factor in treatment like this type of illnesses. The study demonstrated that there is gender variation in the coping of caregivers of male and female patients with epilepsy in which the caregivers of the female patients had poor coping mechanisms

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Original Article

Domestic Violence against Persons with Psychiatric Illness

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ABSTRACT

Introduction: *Domestic violence is a complex problem and there is no one single strategy that will combat all the situations. Analogously, the magnitude of the problem is debatable, as domestic violence is a crime, which is under-recorded and under-reported. Many reasons like shame, fear, lack of information of legal rights, lack of confidence etc., make the victims reluctant to report the incidents of violence against them.* ***Aim:*** *To know the level of domestic violence against persons with psychiatric illness as compared to normal controls.* ***Methods:*** *A cross sectional, case control study design was planned with 30 persons with psychiatric illness and 30 matched control participants. Qualitative assessment and analysis was done.* ***Result:*** *Persons with mental illness were more vulnerable for all kind of domestic violence; mostly it was done by spouse but in case of living with mental illness the chances of violence from other family members was increased.* ***Conclusion:*** *Fundamental rights of person with psychiatric illness were violated by the spouse and family members.*

Key words: *Domestic Violence, Mental Illness, Family Violence*

Introduction

Domestic violence is any act of physical, sexual, or psychological abuse, or the threat of such abuse, inflicted against an individual by a person intimately connected to him/her through marriage, family relation, or acquaintance is universal and has its root in the socio-cultural set up of the society. In another words domestic violence refers to a pattern of abusive behaviour in any relationship that is used on another to gain or maintain power and control over another intimate member. It is a complex problem and there is non existence of a strategy that will combat the worse situations caused by it. Magnitude of the problem domestic violence is under-recorded and under-reported due to reasons like shame, fear, lack of information of legal rights, lack of confidence etc., making the individuals reluctant to report the incidents of violence against them. Patients with personality disorder, affective disorder, schizophrenia, anxiety disorder, substance abuse are mainly involved in domestic violence. It is more common in psychiatric patients but is under-detected by mental health professionals and under-reported by caregivers. Both male and female living with mental health problems are at increased risk of domestic violence.

In most of the domestic violence cases the perpetrators are often been found to be males and the victims, mostly their sexual partners. One third women have been beaten, demoralized into sex or abused in their lifetime by a member of her own family[1]: Mental health is an important and stigmatized issue worldwide and it's imperative for people suffering with mental illness to receive the required care and support. But mental illness cannot be an explanation or excuse for domestic violence with the person living with mental illness. Violence in intimate relationships is still caused by a social belief that one partner is entitled to power and has control over the other. It is necessary to understand the

management strategy of aggression and handled separately than his/her other daily requirements.

Implications of domestic violence has been seen in mental health on survivors of violence. This makes those with mental illness all and needs to the move vulnerable. It's important to think about this correlation when we talk about mental health and domestic violence too.[2]

Domestic violence is often not looked for in mental health settings, nor examined in research into mental health issues.[3] In addition, there are many obstruction to enquiry by health professionals[4] and disclosure by patients.[5] This is despite there being no current evidence to support such a move.[6] Currently, we do not know whether screening will cause more good than harm as we are unsure from evidence which interventions will help women disclosing domestic violence in clinical practice. When people are presenting with issues of mental health, such as depression, anxiety, insomnia, suicidal ideology and post-traumatic stress disorder, it is very likely that there is underlying abuse and violence with women.[7] The association of domestic violence with more severe mental illness, for example bipolar disorder and schizo-phrenia, has been less explored. From the limited studies[8,9] it would appear that the vast majority of people with severe mental illness have experienced either physical or sexual assault during their lifetime and this is often associated with a history of childhood abuse and substance misuse.[3]

The problem of violence against persons suffering with mental illness found little notice, despite several studies suggesting an exceptionally high prevalence of victimization in this population.[8] This paper was focused to describe the domestic violence faced by individuals in North Indian region.

Aim

Present study was aimed to know the level of domestic violence against persons with psychiatric illness as compared to normal controls.

Method

Study was conducted at Institute of Mental Health (IMH), Pt. BD Sharma University of Health Sciences, and Post Graduate Institute of Dental Sciences (PGIDS), Rohtak, Haryana. This is a multi speciality teaching hospital providing services to patients of North India that covers Haryana, Rajasthan, Punjab and Uttar Pradesh.

The study protocol was approved by the Institutional Research Ethics Committee. The data collection was done from 1st July to 30th November, 2016. A cross-sectional design was used. Purposive sampling technique was used to recruit the participants from the outpatient services of both the institutes. A written informed consent was obtained from participants.

Sample

Thirty persons with mental health problems attending Psychiatry OPD of IMH, UHS, Rohtak were evaluated on a specially designed assessment tool. The tool included socio-demographic and clinical profile of the participants and various aspects of domestic violence (i.e. Psychological, Physical, Sexual, Economical and Emotional) were evaluated. 30 matched participants from PGIDS OPD were included as controls.

Results

Table-1. Socio-demographic profile of the participants

Variables		Cases n = 30 (%)	Control n=30 (%)
Age	Mean ± SD		
	11-30 Years	12 (40)	15 (50)
	31-50 Years	15 (50)	09 (30)
	>50 Years	03 (10)	06 (20)
Sex	Male	16 (53)	15 (50)
	Female	14 (47)	15 (50)
Marital Status	Married	24 (80)	24 (80)
	Unmarried	06 (20)	06 (20)
Education	Illiterate	04 (13)	03 (10)
	Primary	07 (23)	08 (27)
	Secondary	15 (50)	13 (43)
	Higher	04 (13)	06 (20)
Occupation	Housewife	11 (37)	10 (33)
	Self Employed	08 (27)	08 (27)
	Service	04 (13)	06 (20)
	Unemployed	07 (23)	06 (20)
Residence	Rural	11 (37)	12 (40)
	Urban	13 (43)	11 (37)
	Semi Urban	06 (20)	07 (23)

Result shows similar socio-demographic profile of both group participants. Mean age of the participants was 34.87 ± 12.48 years. Almost equal percentage of both sexes were present and 80% of them were married. Level of education of the maximum participants in each group is up to

secondary level only, and more than 60% of the participants is either housewife or self employed and from rural or semi-urban setting.

Table-2 Domestic Violence and relationship

Variables		Cases (n = 30)	Control (n = 30)
Violence	Psychological	17	12
	Physical	10	06
	Sexual	02	01
	Emotional	03	01
Relationship	Spouse	05	07
	Other	10	05
	Above Both	04	03
Diagnosis	Schizophrenia / PDD	07 (23)	
	Affective Disorder	09 (30)	
	RDD	09 (30)	
	Neurotic	03 (10)	
	Other	02(07)	

Table two shows the type of violence faced by the participants at some point in their life. All forms of domestic violence were more common in females among controls but among the experimental group both male and female were almost equally predisposed to violence. Perpetrators mostly having a close blood or marital relationship with the victim. Findings of the present study enumerates that violence was done mostly by the spouses among the control group but in the experimental group it was done by family members including spouse.

Psychological and Physical Violence were more common modes of violence adopted by the perpetrators, findings says 56% participants from the experimental group and 40% participants from control group had faced psychological violence from their present family. Physical violence was also rated by the participants of both groups. It was 33% among the person with mental illness and 20% among healthy controls. 6% sexual violence and 9% emotional violence was reported by person with mental illness. Findings also shows person with Bipolar Affective Disorder and depression were more predisposed for domestic violence followed by person with schizophrenia.

Discussion

The previous findings shows people with mental health problems are more likely to experience domestic violence. Thus there is a high prevalence and increased likelihood of being a victim of domestic violence in men and women across all the diagnostic categories of mental health, compared to people without mental health problems. Therefore, longitudinal studies are needed to identify pathways to being a victim of domestic violence to optimize healthcare responses.

Socio-demographic profile of the participants was well matched to reduce the biasness and improve generalization of the findings. Present findings shows low level of qualification, poor financial status and rural or semi rural habitat having a significant role in difficulty in achieving the knowledge and rights of the participants. Probably these socio demographic factors increases the risk of domestic violence, early marriage, justified wife beating and use of alcohol by husbands.[9]

Research findings say women are more vulnerable for domestic violence around the globe British Crime Survey estimate 27% of women and 17% of men in UK experience abuse from their partner during their lifetime [11], with women being more likely to experience repeated and severe violence than man. In a previous study by Garcia et al, reported that women with depressive disorders were more likely to have been victim of domestic violence. He also reported women with other mental health diagnoses, such as eating disorder, Obsessive compulsive disorder, Schizophrenia, Bipolar Disorder and common mental health problems were also more likely to have experienced domestic violence compared to women without mental health problems.[12] We found that person with mental health problems were more likely to face violence in any form from either their partner or family members. This is in keeping with findings from a meta analysis.[13]

Findings of the present study highlights the difficulties of person with mental illness in regard to domestic violence done by the family members. Previous studies measured violence among men with depressive disorders and reported that men with depressive disorders were more likely to experience domestic violence compared to men without mental disorders.[14,15] Most common form of the violence in the study was psychological and physical which was similarly reported by normal controls. Here, one important thing was noticed that in the control group only females reported the domestic violence in any form but in the experimental group it was not gender

based. So it shows domestic violence with persons against mental illness is very high in every form.

Conclusion

Domestic violence can play predisposing maintaining as well causative role for mental health problems. Empowerment of persons with mental health problems with adequate knowledge of their rights, and management in need of time and at a stage when a new mental health act has ben inacted strengthening the human rights of persons with mental illness.

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Original Article

A study of course of bipolar disorder using retrospective life chart method

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ABSTRACT

Background: *The course of bipolar disorder may be different in tropical Countries such as India when compared to temperate nations. There is a dearth of literature about the course of bipolar disorder from India.* ***Method:*** *This study was conducted in Department of Psychiatry RNT Medical College Udaipur. Patients with ICD-10 diagnosis of bipolar disorder, confirmed by consultant psychiatrist were assessed. Information was gathered on demographic and clinical variables, and the life course of episodes was charted using the National Institute of Mental Health – Life Chart Methodology Clinician Retrospective Chart (NIMH-LCM-CRC).* ***Results:*** *A total of 310 patients with bipolar disorder were included. The mean age at onset of illness was 28.88 years. Mania was the first episode in a majority (92.6%) of the cases, and about half of these patients (58.4%) experience only unipolar manic episodes. Patients spent an average of 11.42% of the illness duration in a mood episode, most commonly a manic episode. The median duration of manic or depressive episode was 1.89 and 3.0 months. Median time to recurrence after the first episode was 1.89 and 3.0 months. Median time to recurrence after the first episode was 36 months.* ***Conclusion:*** *Bipolar disorder among Indian patients has a course characterized by predominantly manic episodes, which is in line with previous reports from tropical countries and substantially different from that of temperate regions.*

Keywords: *Bipolar disorder, Course, Tropical countries.*

Introduction

Bipolar disorder is characterized by the occurrence of at least one manic or mixed-manic episode during the patient's lifetime. Most patients also, at other times, have one or more depressive episodes. In the intervals between these episodes, most patients return to their normal state of well-being. Thus bipolar disorder is a "cyclic" or "periodic" illness, with patients cycling "up" into a manic or mixed-manic episode, then returning to normal, and cycling "down" into a depressive episode from which they likewise eventually more or less recover.[1]

The recently conducted World Mental Health survey found that the prevalence of bipolar spectrum disorder is 0.1% in India.[2]

It has recently been suggested that the course of bipolar disorder may be different in tropical countries like India with a preponderance of manic episodes,[3] as compared to the temperate developed nations from where the majority of the published literature on bipolar disorder has emerged. If such differences in the types of episodes exist, they would have contextual implications in the management and service delivery focus of this vast patient population.[3]

There is a lack of long term studies of the course

and outcome of adults with bipolar disorder from India, and sample sizes in these studies have generally been small.[4-7]

In the absence of prospective data, systematic retrospective studies can be a useful foundation for robust and large-scale prospective studies to emerge. Given the lack of systematic data on the course of bipolar disorder in this setting, we planned to characterize the course of this disorder among patients attending a tertiary care centre using a widely accepted retrospective life chart method in this cross-sectional study.

Aims and Objectives

Aim: To study course of bipolar disorder using retrospective life chart method

Objectives

1. To study socio-demographic profile of patients with bipolar disorder.
2. To study course of bipolar disorder using retrospective life chart method (episode duration, type of episode and severity)

Materials and Methods

Research setting: This study was conducted in Department of Psychiatry, M.B. Govt. Hospital, R.N.T. Medical College, Udaipur.

Inclusion Criteria

1. The patient/attendant should give informed consent.
2. Both patients on long-term follow-up and those recently admitted as in-patients with a diagnosis of bipolar disorder were screened for participation
3. Age of onset 15-60 years
4. Diagnosis of bipolar disorder using the ICD-10.[8]
5. Patient accompanied by a key informant: a key informant was defined as a person who lives with the patient and has known him/her long enough to have witnessed a considerable period of the illness to conform reliability and adequacy.

Exclusion Criteria

1. Patients/attendant who did not give consent.
2. Patients without a key informant
3. Age of onset less than 15 or more than 60 years
4. Had any neurological disorder or significant physical co-morbidity as per clinical history and physical examination

Instruments of Study

1. **Screening Performa:** This includes a few basic questions regarding the patient's complains, history details (past, family, substance abuse), questions related to the eligibility for determining the inclusion & exclusion criteria.
2. **Consent form**: This form was written in Hindi language and it was given, once the patient was enrolled in the study.
3. **Modified Kuppuswamy scale:** For socio-demographic profile.
4. **NIMH Life Chart Manual for Recurrent Affective Illness**: The NIMH-LCM (National Institute of Mental Health-Life Chart Methodology Clinician Retrospective Chart) was used for charting the course of illness for each patient.[9]

Procedure of the Study

After applying the inclusion and exclusion criteria, the information was gathered in one or two sittings from the patients, the key informant, and case records. A semi structured Performa were used to assess the clinical characteristics through history sheet and demographic details through modified Kuppuswamy scale. This was followed by gathering information about the course of bipolar illness using the National Institute of Mental Health-Life Chart Methodology Clinician Retrospective Chart (NIMH-LCM).

Results

Demographic and clinical characteristics: A total of 310 patients were recruited in the study out of 512 screened patients. The characteristics of the patients are depicted in Table 1. The majority of the participants were from a lower socio-economic background (89.4%). The mean age at onset of bipolar disorder was 28.8 years. In our study, 55.2% of the sample (n = 171) had substance abuse or dependence. Alcohol use disorder was found in 8.4% (n = 26), nicotine in 40.6% (n = 126) and

cannabis in 5.2% (n = 16)

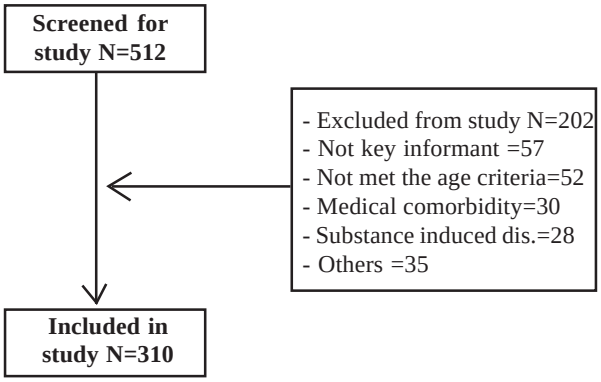

Fig. 1. Sample recruitment

Table 1. Socio-demographic and clinical characteristic of the sample (N=310)

Variable	N (percentage) or mean (standard deviation)
Age	**38.44 (12.5)**
Gender	
Male	189 (61%)
Female	121 (39%)
Education	
Illiterate	111 (35.8%)
Primary	105 (33.9%)
High school	43 (13.9%)
Higher secondary	25 (8.1%)
Graduate	19 (6.1%)
Post graduate	7 (2.3%)
Occupation	
Not working	135 (43.5%)
Working	175 (56.5%)
Religion	
Hindu	305 (98.4%)
Muslim	5 (1.6%)
Family Income/month	
< 5000	20 (6.4%)
5000-12000	257 (83%)
> 12000	33 (10.7%)
Age at illness onset (in years)	28.88 (10.5)
Males	29.10 (10.4)
Females	28.55 (10.6)
Substance use	171 (55.2%)
Nicotine	126 (73.6%)
Alcohol	26 (15.2%)
Cannabis	16 (9.3%)
Family history	
Mood disorder	95 (30.6%)
Schizophrenia	17 (5.5%)
Any mental disorder	11 (3.5%)

Course of bipolar disorder

The course characteristics are summarized in Table 2. On an average the subjects had around 4.4 mood episodes during their entire duration of total illness period of about 9.5 years. Out of 4.4 mood episodes, an individual had 3.5 manic episodes, 0.44 depressive episodes 0.43 hypomanic episodes, and 0.02 mixed episodes. 181 patients (58.4% of the sample) had only recurrent manic episodes (unipolar mania). Depressive, hypomanic and mixed episodes were noted in 64, 42 and 4 patients respectively. The percentage of time spent was 11.4% of their total illness period in the syndromal phases of the illness, bulk of which comprised of manic episodes. Time spent in mania was the maximum followed by depressive episode, hypomania episode and mixed.

Table-2. Course characteristics of the total sample [n=310]

Overall characteristics	Mean	Median
Age at onset (years)	28.88	26.00
Total duration of illness (years)	9.51	7.00
Number of episode	4.42	3.00
Total Time spent in episodes (months)	9.15	7.00
Total Percentage of time spent	11.42	8.33
Duration of individual episode (months)		
Mania	2.1802	1.89
Depression	2.8859	3.00
Hypomania	1.6285	2.00
Mixed	4.0000	4.00

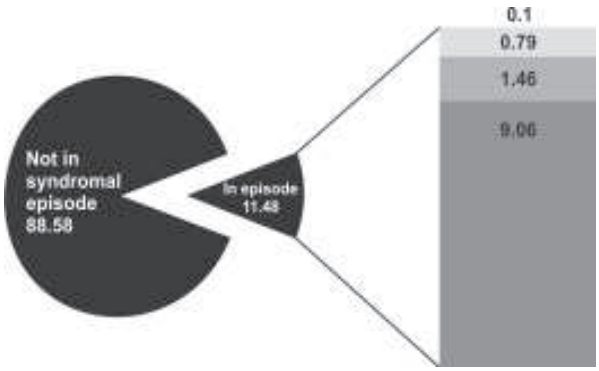

Fig. 2. Percentage of time spent in different phases

Effect of gender and substance use on course characteristics:

It was seen that there were no significant differences in course characteristics such as age of onset, duration of illness, and number of episodes

Table-3. Influence of gender on course

Gender and course	Male mean N = 189 (SD)	Female mean N = 121 (SD)	P value
Age at onset	29.10 (10.46)	28.55 (10.64)	0.659
Total duration of illness (yrs)	9.75 (8.23)	9.15 (7.11)	0.512
Number of episode	4.5 (3.82)	4.3 (3.29)	0.636
Total time spent (months)	9.03 (7.36)	9.35 (15.16)	0.807
Percentage of time spent	11.37 (9.63)	11.50 (10.82)	0.914

Table-4. Influence of substance use on course

Substance use and course	With Substance use mean N=139 (SD)	Without substance use mean N=171 (SD)	P value
Age at onset	29.63 (10.30)	28.27 (10.69)	0.259
Total duration of illness (yrs)	9.81 (8.16)	9.27 (7.53)	0.553
Number of episode	4.78 (4.21)	4.13 (3.05)	0.117
Total time spent (months)	10.40 (14.80)	8.14 (6.51)	0.073
Percentage of time spent	11.91 (10.59)	11.02 (9.69)	0.440
Recurrence after 1st episode	47.96 (46.62)	50.53 (51.27)	0.647

across the two genders. Patients with substance use did not differ significantly from non-users in their course characteristics.

Index episode and recurrence after index episode

The first (index) episode was mania in 287 patients, depression in 16 patients, and hypomania in 7 patients. Out of 310 patients lifetime depressive episode, was present only in 64 patients. Out of 64 patients first episode was depression in only 16 (25.0% of those having at least one depressive episode), and was mania in the remaining 48 (75.0%). After the first episode of illness, median time to recurrence (of any polarity) was 36 months. For an index episode of mania (n=287 patients), the median time to recurrence was 36 months. Depression as the first episode (n=16 patients) had a median time to recurrence of 19 months. When hypomania was the first episode (n=7 patients) had a median time of recurrence of 12 months.

Table-5. Time of Recurrence when

Type of First Episode	N	Mean	Median	Grouped Median
Mania	287	50.92	36.00	33.80
Depression	16	30.25	19.00	16.50
Hypomania	7	30.00	12.00	20.00
Total (Any Polarity)	310	49.38	36.00	32.59

Discussion

The major concerns of this study were to identify socio-demographic profile of patients with bipolar disorder and to study course of bipolar disorder using retrospective life chart method.

A total of 310 patients were recruited in the study out of 512 screened patients. 61% (n = 189) participants were males and educated below high school (69.7). The majority of the participants were from a lower socio-economic background (89.4%).

These finding of socio-demographic profile of sample were similar to study in this region.[4] Socio-demographic data showed Bipolar illness occurring commonly in young, having usual onset in late-twenties of life (mean age 28.88 years) but could occur at any age (15-60), which was comparable with previous literature (Chopra et al, 2006). Higher prevalence of bipolarity was seen in persons with lower education, housewives, farmers and in those from rural background. Substance use was found in 44.8% of the total sample. 67.7% of the total males were found to use one of the substance while only 9% of the total female were found to use the substance.

Most common substance found to be used was tobacco 90.6%, followed by alcohol 18.7%, and cannabis in 11.5%. This is contradictory to study of (S. Kharthick et al, 2015)[4] where major substance abuse was alcohol 20%, tobacco 17.3%, and

cannabis 1%. This is because most of the patients in our sample belong to rural background and tobacco is cheaper, easily available and more prevalent in this region.

Family history of any psychiatric illness was positive in 39.6% (n=123) of sample. Out of which mood disorder was found in 30.6% (n=95), Schizophrenia in 5.5% (n=17), and other psychiatric illness in 3.5% (n=11).

It was found that in our study total duration of illness increases significantly when family history of mood episode was present other course characteristic were not significantly influenced by family history of mood disorder compare to previous study in which family history significantly influence the course of bipolar illness.[11,12]

The present study using a standardized life chart methodology found that the first episode in our sample was mania in majority of cases (92.6%), which is similar to findings from other studies in India (Chopra et al, 2006; Khanna et al, 2015)[5,6] including a recent study in which 85% had an index episode of mania. (S. Khathick et al, 2015).[4] This is in contrast to studies from West, where index depression is more frequent. For example, only 41% had manic onset in Denmark[10]; 67% had a depressive onset in a Spanish sample[14] and 50% had depressive onset in an Italian sample.[15] Over the course of the illness, mania was more common than other types of episodes, which is in concurrence with the literature from both India[4-6] and other tropical areas such as Nigeria,[16] Ethiopia,[17] Israel[18] and Hong Kong.[19] In contrast, other studies from Spain, Germany, United States have reported that a majority of the patients with Bipolar I Disorder spend a greater proportion of their time in depressive phase than in the manic phase.[20-23] Knowledge of predominant polarity and polarity index can be utilized as a guide for determining the choice of treatment, as different pharmacological and non-pharmacological measures vary in their relative efficacies for mania and depression prevention.[22] The predominance of manic polarity of bipolar I disorder in the present study matches with the findings from other tropical countries and is contrary to findings from temperate countries. There are various possible reasons for this difference. Firstly, The zeitgeber effect has been proposed as an explanation for the increase in manic polarity of bipolar illness.[3]

Secondly, such a finding may also arise due to proclivity of the patients and their family members towards recollecting disruptive manic episodes. Recollection of depressive episodes could have been missed by patients and family members due to the greater impact of manic episodes. In Indian culture depressive episodes may have remained under recognized and considered to be a normal variant of shanti (Calmness), which is being measured as a mental state of peace in accordance to Hindu mythology. Although in mania, because of its distinctly abnormal presentation, it could have been well recognized by the relatives. Thirdly, the differences in polarity of episodes might be accounted for by possible gene–environment interactions.

The mean age at onset of illness among our patients was 28.8 years (SD = 10.5). This is similar (mean 27.7) to previous study from the same region by Chopra[5] and studies by S. Karthick[4] (24.8) and Backlund.[13] In contrast Yatham[24] found a mean age at onset of 19.3 years (SD = 4.3) in a study comprising of patients with first episode mania, Kuffer[25] 19.8, Goldberg and Garno[26] 17.5 year which is much younger than our sample.

The age at onset of bipolar disorder has implications for heritability, clinical course and treatment.

The mean length of the episodes in the present study suggested that manic and depressive episodes lasted on an average between 2 and 3 months. This finding is similar to study of S.Karthick. However, recent studies have shown that the mean episode duration is shorter than what has been historically described (Chopra[5]; Judd[27]). Since this hospital-based study included patients who were on follow-up, the shorter durations of episodes may also be reflect the effects of treatment and the role of the family in early identification and facilitation of treatment. The present study suggests that about one-tenth of the illness duration was spent in the syndromal phase. There is evidence from the literature that subsyndromal mood states might be present in a substantial proportion of time during the illness course, and might be associated with functional impairment.[27,28] The subsyndromal phase of the illness was not assessed in the present study due to difficulties in reliable recall, and could be better assessed in prospective study designs.

No significant differences were found in the time spent during illness in male and female which

were found in previous study.[4]

And also no significant differences were found in the other characteristics of onset and course of the illness, which is in line with other studies.[27,29]

The median time to recurrence after first episode was 36 months (2-276). This time to recurrence is longer than reported in the West[24,30] and an Indian study.[4] The reasons of low relapse rates could be possibly attributed to the involvement of family members in the treatment in Indian context. Patients most often live with other family members who help the patient with procurement of medication and provide supervision. Poor adherence is one of the major factors for relapse of bipolar disorder,[31] which is probably mitigated by active participation of family members in treatment process.

Predominant polarity during the course of bipolar disorder seems to have important clinical and therapeutic implications. It was found that in our sample unipolar mania was more common 58.4% (n = 181) and index episode of mania was found in 92.6% (n = 287). Polarity of the first mood episode determined the predominant polarity during the course. Turvey reported that the polarity sequences tend to remain stable over time.[32] In a study by Perlis 62% of patients whose initial episode was mania had a predominantly mania course.[33] Other studies have also demonstrated that initial episode's polarity determines the predominant polarity during the course, i.e. initial episode of mania and depression determine the predominantly manic and depressive course, respectively.[20,21]

Course of bipolar disorder in the India and other tropical countries need to be systematically examined using multiple data sets, and if confirmed, the reasons for this difference in phenomenology need to be understood. It could offer an insight into the biological and environmental correlates, and thus improve our understanding and therapeutics of the syndrome.

Limitation

NIMH-LCM as a study instrument has the possibility of recall bias affecting some of the study findings, as it was based upon retrospective recall. Collateral information was obtained from the key informants, as well as case records to minimize possibility of such errors. Studying hospitalized sample could have resulted in the evaluation of a severely ill population, thus limiting the generalizability. Mild depressive episodes and subsyndromal phase of the illness may have been underreported. Finally longitudinal medication adherence was not assessed in this study.

Conclusion

In conclusion, the present study suggests that the average age of onset in this region with bipolar disorder is about 28 years.

Manic episodes are far more common than depressive ones, and more than half of these patients experience only unipolar manic episodes.

About one-tenth of the illness duration is spent in episodes of syndromal illness. The finding of more frequent manic episodes in the present population provides a launching pad for future prospective studies looking at subsyndromal manic and depressive symptoms during follow up, and assessing their relationship with functioning.

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Original Article

Personality Profile of Persons with Pseudoseizures

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ABSTRACT

Background: *Pseudoseizures or Psychogenic non-epileptic seizures (PNES) can be defined as paroxysmal events that resemble or can be mistaken for epilepsy, without being associated with abnormal electroencephalogram (EEG) activity or any other primary physiological disturbance. Most are interpreted as a behavioral or experiential response to overwhelming distress. Though the differentiation from the genuine seizures is not easy, however, an understanding of the phenomenology can be helpful in making the diagnosis. A detailed case history of the patient's present illness will reveal the etiological importance of mental conflict.* ***Aim:*** *In the present research an attempt has been made to understand if there are any common personality traits and defence style present in persons with diagnosis of pseudoseizure.* ***Method****: The sample of the study was purposive. Cases were selected from a tertiary care hospital in the state of Jharkhand. The experimental group consisted of cases with clinical diagnosis of only pseudoseizures and patients with epilepsy were taken as the control group.* ***Results****: They showed that there was no difference in terms of source personality traits of pseudoseizure and seizure patients. Also Pseudoseiozure patients used more of reversal type of defenses at the level of feelings whereas seizure patients used more of projection in fantasy and turning against self in thoughts.*

Key words*: Pseudoseizure, Personality profile.*

Introduction

Pseudoseizures or Psychogenic non-epileptic seizures (PNES) can be defined as paroxysmal events that resemble or can be mistaken for epilepsy, without being associated with abnormal electroencephalogram (EEG) activity or any other primary physiological disturbance. Most are interpreted as a behavioral or experiential response to overwhelming distress overwhelming distress[1]. Psychogenic non-epileptic seizures sit uneasily within the current psychiatric classification systems, classified as a dissociative (conversion) disorder ('dissociative convulsions') in ICD-10[2] and as a somatic symptom disorder in DSM-5.[3]

Epidemiology

An Indian study examined patterns of dissociative disorders among subjects attending psychiatric services over a period of 10 years[4]. They concluded that Dissociative disorders were still commonly diagnosed in both inpatient and outpatient settings. Dissociative motor disorders and dissociative

convulsions were the most common disorders. Unlike in the West, dissociative identity disorders were rarely diagnosed.

The clinical and socio-demographic profile of 80 patients with dissociative disorder was studied[5] in Kakinada, Andhra Pradesh, India. Their results showed that the occurrence of dissociative disorder was found to be higher in females (75%) than in males (25%). The predominant study population was between the age group of 30-40years (53.75%), married (76.25%) and housewives (45%). Trance and possession and motor dissociation were the commonest presentations with 30% and 25% respectively. In the present study patients with PNES or Pseudoseizure (as popularly known) were only taken for the study as it most common presentation with which the patient come to the hospital for treatment.

Diagnosis

An accurate diagnosis of Dissociative motor disorder is necessary. If a case is misdiagnosed it would lead to negative psychological and socio-economic consequences. It has been found that the antiepileptic drugs and visit to the doctors maintain the symptoms (secondary gains). Secondly, receiving antiepileptic drugs with no effect would frustrate the doctor and the patient apart from the drug's side effect.

Though the differentiation from the genuine seizures is not easy, however, an understanding of the phenomenology can be helpful in making the diagnosis. A detailed case history of the patient's present illness will reveal the etiological importance of mental conflict .The patient's history can convey some idea of his personality background, an understanding of the events chronologically and its relation to the onset, perpetuation, exacerbation, and disappearance of each of patient's symptoms with changes in his life situation gives an insight into the dynamics of psychopathology[6]. It has been seen that the onset of Dissociative motor Disorder is gradual, no injury while falling down, duration of the attack is longer, the pattern changes from one episode to another and are usually precipitated by emotional / stressful situation. There are both primary and secondary gains, manifestation of the conversion/ dissociation act as a primary gain, in reduction or disappearance of anxiety and as a secondary gain by receiving attention, sick role, pampering, and escape from work. The secondary gain works in maintaining the pseudoseizures.

Personality

Personality traits and psychopathology: Pathological personality traits are frequently found in patients with PNES, with reports of proportions of patients fulfilling diagnostic criteria for personality disorder as high as 75–90%.[7,8] There is also evidence that certain premorbid personality traits and coping styles are associated with PNES, for example a relationship has been found between PNES and alexithymia or abnormally avoidant coping.[9,10] Associated psychopathology can also be seen as a possible predisposing factor, although it is often difficult to determine retrospectively whether psychopathology is part of the primary cause, consequence and/or perpetuating factor of PNES.[8]

Therefore in the present research an attempt shall be made to understand if there are any specific personality traits and defence mechanisms which are present in persons with diagnosis of Pseudoseizure.

Aim

To study and compare the personality traits and defense mechanisms of the persons suffering from Pseudoseizures and Epileptic seizures.

Method

The present research was conducted as a cross sectional exploratory study where an attempt was made to explore personality factors and defense mechanisms applied by the patients diagnosed either by suffering from Pseudoseizures or Epileptic seizures.

The sample of the study was purposively selected. Cases were selected from a tertiary care hospital in the state of Jharkhand. The first group consisted of cases with clinical diagnosis of only pseudoseizures and patients with epilepsy were taken as the second group. A sample of 20 patients, both male and female, was taken in both the groups.In the first group Patients above 17 years of age, with a diagnosis of non-epileptic seizures, the ones who are able to read and write and Co-operative for testing were taken for the study. Cases in which no clear-cut description of seizure

phenomenon, presence of co-morbid psychiatric disorders (according to DSM V and ICD-10), presence of mental retardation, substance related use disorders and other neurological disorders other than epilepsy, e.g., stroke, dementia etc and inadequate information of medical history and other medical conditions were excluded. Similarly in the second group the patients diagnosed as having epilepsy according to International League against Epilepsy (ILAE) classification of seizure type (1981) and epilepsies and epilepsy syndrome (1989). Patients' age, sex, education, and marital status as matched with the sample those consenting for the study and co-operative for testing were taken. The following cases were excluded-presence of co morbid psychiatric disorders (according to DSM IV and ICD-10), persons with stroke, dementia or any other neurological disorder other than epilepsy and persons with mental retardation, substance use related disorder.

Tools Used

- Specially designed Performa for eliciting socio-demographic data and specific areas in the history.
- 16 Personality Factors (16PF) – to understand the Source Personality Traits.[11]
- Defence Mechanism Inventory (DMI).[12] The inventory was adapted in Hindi.[13]

Further, for analyses, mean, SD and percentages, Chi square test and 't' test were applied for the comparison of the two groups.

Results

In the present study personality profile of the persons with pseudoseizure was studied. The sample consisted of 20 pseudoseizure persons (group 1) and 20 persons with seizure disorder (group 2).

Table 1 shows that in both the groups, females were more than the males i.e. 80% in pseudoseizures and 55% in seizures group. Most of the patients in both the groups were single. The percentage of patients in the other category that consisted of housewives and students were more in the two groups (85% & 80% respectively). More patients belonged to the urban class (40% & 45%). Majority was from middle class background. Only 20% of the person with pseudoseizures reported history of traumatic event. However, the results of x^2 also show that no significant differences existed between the two groups; hence both the groups were similar on all other socio-demographic parameters.

The mean age of the person with pseudoseizures and the person with seizure were 26.05 ± 8.94 and 25.65 ± 9.22 years respectively. The mean education of the two groups in years was 10.15 ±

Table-1: Socio-demographic details of the two groups in Percentage, their chi square value & level of significance

Variables		Groups		x^2	df	p
		Group –I Pseudoseizures N = 20 (%)	Group-II Seizures N = 20 (%)			
Sex	Male	4(20)	9(45)	1.82	1	NS
	Female	16(80)	11(55)			
Maritalstatus	Single	12(60)	13(65)	.00	1	NS
	Married	8(40)	7(35)			
Occupation	Employed	2(10)	2(10)	.37	2	NS
	Unemployed	1(5)	2(10)			
	Others	17(85)	16(80)			
Residence	Rural	7(35)	4(20)	1.22	2	NS
	Sub-urban	5(25)	7(35)			
	Urban	8(40)	9(45)			
Socio-economic status	Lower	4(20)	2(10)	.19	1	NS
	Middle	16(80)	18(90)			
	Upper	—	—			
Traumaticevents	Present	4(20)	—	2.5	1	NS
	Absent	16(80)	20(100)			

NS= Non-significant

Table-2: Mean, SD & t value of age, education, duration of illness between the two groups

Variables	Groups		t	p
	I Pseudoseizures	II Seizures	(df = 38)	
	Mean ± SD	Mean ± SD		
Age	26.05 ± 8.94	25.65 ± 9.22	.14	NS
Education	10.15 ± 3.26	11.20 ± 3.87	-.93	NS
Duration of illness	53.20 ± 85.07	56.15 ± 54.70	-.13	NS

NS= Non-significant

Table-3. Mean, SD & t value of the two groups on the 16 Personality Factors

16 Personality Factors	Groups		t (df = 38)	P
	I Pseudoseizures	II Seizures		
	Mean ± SD	Mean ± SD		
A	4.65 ± 1.59	4.65±1.49	.00	NS
B	4.35 ± 2.32	3.95 ± 2.03	.58	NS
C	3.90 ± 1.80	3.95 ± 1.93	-.08	NS
E	5.65 ± 1.95	5.80 ± 1.67	-.26	NS
F	4.15 ± 1.84	3.95 ± 1.35	.39	NS
G	5.80 ± 2.80	5.95 ± 1.57	-.21	NS
H	4.75 ± 1.55	4.25 ± 1.71	.97	NS
I	5.30 ± 1.62	5.45 ± 1.66	-.29	NS
L	6.30 ± 1.75	6.70 ± 1.71	-.73	NS
M	5.20 ± 1.76	5.15 ± 2.30	.07	NS
N	5.65 ± 1.92	5.05 ± 2.08	.94	NS
O	6.50 ± 2.54	5.65 ± 1.66	1.25	NS
Q1	4.35 ± 1.81	4.70 ± 1.26	-.70	NS
Q2	6.30 ± 1.92	5.65 ± 1.72	1.12	NS
Q3	5.45 ± 2.23	6.20 ± 1.67	-1.20	NS
Q4	5.95 ± 2.37	4.85 ± 1.98	1.59	NS

NS= Non significant

Table 4. Shows means, SD & t values of the two groups on five defenses

DMI	Groups		t (df=38)	P
	I Pseudoseizures	II Seizures		
	Mean ± SD	Mean ± SD		
TAO.AB	7.18 ± 2.30	8.0 ± 2.82	-1.03	NS
TAO.FB	7.35 ± 2.87	8.30 ± 3.22	-.98	NS
TAO.T	6.80 ± 2.60	7.50 ± 3.30	-.74	NS
TAO.F	7.90 ± 1.97	9.25 ± 2.55	-1.87	NS
PRO.AB	8.15 ± 2.45	9.15 ± 2.96	-1.16	NS
PRO.FB	8.80 ± 2.28	10.85 ± 2.43	-2.74	<.O5
PRO.T	8.40 ± 9.20	2.76 ± 2.35	-.98	NS
PRO.F	8.55 ± 2.48	9.25 ± 2.07	-.96	NS
PRN.AB	11.10 ± 2.80	10.15 ± 2.05	1.22	NS
PRN.FB	11.40 ± 2.37	10.80 ± 1.32	.98	NS
PRNO.T	12.10 ± 2.90	11.55 ± 2.78	.61	NS
PRN.F	10.50 ± 2.76	11.65 ± 2.85	-1.29	NS
TAS.AB	9.95 ± 2.32	10.75 ± 2.19	-1.11	NS
TAS.FB	9.35 ± 2.15	9.45 ± 2.28	-.14	NS
TAS.T	9.25 ±2. 80	11.35 ± 2.53	-2.48	<.O5
TAS.F	9.65 ±2 .75	9.85 ± 2.39	-.24	NS
REV.AB	11.80 ± 3.12	11.55 ± 2.30	.28	NS
REV.FB	11.75 ± 3.33	10.60 ± 3.80	1.01	NS
REV.T	11.70 ± 2.55	10.70 ± 3.46	1.03	NS
REV.F	12.25 ± 2.82	10.30 ± 2.63	2.25	<.O5

Legend: TAO = turning against object; PRO = projection; PRN = principalisation; TAS = turning against self; REV = reversal; AB = actual behaviour; FB = fantasy behaviour; T = thought; F = feeling; NS = Non significant

3.26 and 11.20 ± 3.87 respectively. The mean duration of illness of the two groups was 53.20 ± 85.07 and 56.15 ± 54.70 in months. There was no significant difference on age, education and duration of illness of the two groups.

Further 't' test was applied to see the significant difference between the mean scores obtained on the 16 personality factors of the two groups, as measured by 16 PF test. The results are shown in table 3. Surprisingly, no significant differences were found on any personality factor between the patients of the two groups. It shows that there are no specific personality traits which can be attributed to the persons with Pseudoseizures. Secondly almost all the personality traits were found to be in the average range as was depicted by the Mean and SD scores of both the groups for all 16 factors. No specific trend of personality factors specific to persons suffering from Pseudoseizures or Epileptic seizures could be identified with the help of 16 PF test.

Of the five types of defenses pseudoseizure patients scored high on Reversal (feelings) than the seizure group, mean was 12.25 ± 2.82 & 10.30 ± 2.63 ($p < .05$). On the other hand seizure group scored high on projection (in fantasy), the mean was 10.85 ± 2.43 & 8.80 ± 2.28 ($p < .05$) for the pseudoseizures group, and turning against self (thought) where the mean was 11.35 ± 2.53 & 9.252.80 ($p < .05$)of the pseudoseizures group. Hence there was a significant difference between the two groups on PRO.FB, TAS.T and REV.F

Discussion

Socio-demographic variables

The mean age of the patients with pseudo-seizures was 26 & that for the control group was 25. The current study had females dominating (80% Vs 20%) the group in comparison to the relatively equal male-female ratio (55% and 45%) of the control group. Majority of the patients were unmarried in both groups: Major chunk of the experimental sample were from middle urban SES and rest from lower SES. Similar results were observed of the control group, the major sample belonging to middle urban, then from suburban and least from the rural background. The mean years of education were 10 years for the experimental group and 11 years for the control group. The average duration of the illness was 53 months (4 ½ years) for both the groups. A major number of the patients with pseudoseizures were either students or housewives. This was the same with the control group too. Some of the findings were similar to another Indian study[14] in Hadoti, Rajasthan, to study the socio- demographic profile of patients of dissociative (Conversion) Disorders (50 patients, > 12) and to find the number of stressful life events precipitating the disorder. They found a predominance of females (88%), married (70%), housewives (66%), illiterate (40%), Hindu religion (54%), and age group of 18- 30 years. Majority of patients came from rural background (66%).

Personality traits

As for the source traits that were assessed in both groups using 16PF, differences were observed on certain factors. The pseudoseizure patients were more apprehensive, careless and tense and overwrought; yet they seem to have a preference to make their own rules and decisions. But, the seizure group were more relaxed, tranquil and socially precise. However the pattern can't be generalized in the pseudoseizures group, as these differences were not significant enough. A study[15] on hysterical conversion patients using Temperament Character Inventory found that these patients exhibited specific characters like harm avoidance, fearfulness, irresponsibility, quick temperedness and insensitiveness. Though the tools measured different aspects i.e. source personality traits and characters, the findings were found to be similar to those of the present study.

Defenses

The aim of using the Defense Mechanism Inventory was to study the defense styles of the group with pseudoseizures and compare them with the group having true seizures. The pattern that emerged shows that the pseudoseizures group used a greater deal of reversal style of defense. The conflicts were dealt by responding in a positive or neutral fashion to a frustrating object that might be expected to evoke a negative reaction. This defense was used at the level of feelings.

In comparison, the control group used more of projection at fantasy level i.e. these patients act out impulsively in imagination. Also, they used more of 'turning against self' style of defense in thoughts.

These patients direct aggressive behaviour towards themselves at the thought level. These were the three styles of defense that were significantly different between the two groups. As there seems to be paucity of studies using this particular tool or any similar tool on the specified population, no comparisons could be drawn.

Limitations

The sample size was small. Persons below the age of 17 years could not be taken due to the tool used though they were in fairly good number.

Further Suggestions

A larger sample could be taken for better generalization of the findings and for its diagnostic implications. Research on children population could be taken for an understanding of various psychological aspects that evoke and maintain the symptoms. In future studies a sample consisting of patients having both seizures and pseudoseizures could be taken and assessed using same tools for a better understanding and comparison.

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Psychomicrobiology

H1N1 infection and its association with psychiatric disorders

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Introduction

Swine flu (swine influenza) is a respiratory disease caused by family of influenza virus that infects the respiratory tract of pigs. The virus can last about one to two weeks in pigs that survive. Symptoms include influenza-like illness like cough, sore throat, nasal secretions, watery eyes, fever, abdominal pain and listless behavior. The virus infect the respiratory tract of pigs and can be transmitted to humans either by inhaling the Infected droplets present in the air through coughing or sneezing or by touching contaminated surfaces and then touching the mouth or nose. The virus was first isolated from pigs in 1930 in the U.S. and has been recognized by pork producers and veterinarians to cause infections in pigs worldwide[1]. In a number of instances, humans have developed the swine flu infection when they are closely associated with pigs (for example, farmers, pork processors), and likewise, pig populations have occasionally been infected with the human flu infection. In most instances, the cross-species infections (swine virus to man; human flu virus to pigs) have remained in local areas and have not caused national or worldwide infections in either pigs or humans.

It has been lately observed that people infected with swine flu show some unusual behavior like uncontrolled hand washing, fear of public places etc. This observation led the researchers to explore the possibility of association between swine flu infection and psychiatric disorders.

This article will review the available literature on swine flu and its possible association with psychiatric disorders.

History

The 2009 H1N1 influenza virus was first detected in people in the United States in April 2009. This virus was originally referred to as "*swine flu*" because laboratory testing showed that its gene segments were similar to influenza viruses that were most recently identified in and known to circulate among pigs. CDC(Center for Disease Control and Prevention) believes that this virus resulted from reassortment, a process through which two or more influenza viruses can swap genetic information by infecting a single human or animal host. When reassortment does occur, the virus that emerges will have some gene segments from each of the infecting parent viruses and may have different characteristics than either of the parental viruses, just as children may exhibit unique characteristics that are like both of their parents. In this case, the reassortment appears most likely to have occurred between influenza viruses circulating in North American pig herds and among Eurasian pig herds. Reassortment of influenza viruses can result in abrupt, major changes in influenza viruses, also known as "*antigenic shift*." When shift happens, most people have little or no protection against the new influenza virus that results.[2]

Prior to discovery of the 2009 H1N1 influenza virus, this particular combination of gene segments from North American and Eurasian swine had never been detected before in a single influenza virus and

this new virus is different from the influenza viruses that normally circulate in North American and Eurasian pigs. It is not known when reassortment occurred to create the 2009 H1N1 influenza virus. Testing of the virus suggests that this reassortment event may have occurred years prior to the first reports of 2009 H1N1 influenza infection in people.[2] Scientists call 2009 H1N1 influenza a "quadruple reassortant" virus, because although each separate gene segment of the virus has been found in pigs previously, the individual gene segments of the virus originated from humans, birds, North American pigs and Eurasian pigs.

Pigs can be infected by influenza viruses found in birds and other animals as well as people. Therefore, pigs represent a mixing vessel in which influenza viruses from different species can swap genes. For example, in a setting where people and animals are in close contact, pigs can be infected by influenza viruses found in pigs, poultry or humans – sometimes at the same time. For at least 80 years, influenza viruses known as "classical swine H1N1" viruses have circulated in North American pigs. However, in the late 1990s, a series of reassortment events occurred between influenza viruses found in pigs, humans and birds. As a result, swine influenza viruses with genes from humans, North American pigs and birds have existed in many parts of the world for around 10 years prior to 2009 H1N1 flu. Mixing of these "triple reassortant North American swine influenza viruses" with Eurasian swine viruses likely resulted in the 2009 H1N1 influenza virus.

It is unlikely that swine flu virus was created in lab because each of the gene segments within the 2009 H1N1 influenza virus have been found in pigs for more than 10 years prior to the beginning of the 2009 H1N1 influenza outbreak.[2] Pigs have long been considered a possible mixing vessel for influenza viruses that originate within pigs, birds and humans. In addition, a 2009 Nature study showed that reassortment between influenza viruses found in North American and Eurasia pigs had already occurred at least once naturally in the 5 years prior to the identification of 2009 H1N1 flu. Also, the 2009 H1N1 influenza virus does not have adaptations consistent with viruses grown in laboratories.

Genetic Mutations in the Virus

We know that reassortment occurs frequently in nature. Fortunately, reassortment rarely results in a virus with pandemic potential, though it has done so at least twice in the 20th century. The influenza viruses that caused the 1957 and 1968 pandemics contained a mixture of gene segments from human and avian influenza viruses. What is clear from genetic analysis of the viruses that caused these past pandemics is that reassortment (gene swapping) occurred to produce novel influenza viruses that caused the pandemics. In both of these cases, the new viruses that emerged showed major differences from the parent viruses. However, not all viruses emerge directly from reassortment events. For example, the origins of the 1918 virus are not precisely known, but experts think it is likely that the 1918 virus may have resulted from a bird influenza virus directly infecting humans and pigs at about the same time without reassortment.

The emergence of the 2009 H1N1 influenza virus in humans highlights the need for better surveillance of influenza viruses in pigs and other animals. The mixing of influenza genes in pigs can result in the emergence of viruses with pandemic potential in humans. Improved surveillance of influenza in pigs and other animals may help to detect the emergence of influenza viruses with the potential to cause illness and spread among people, possibly resulting in a pandemic. Early detection of such viruses can alert public health officials and aid in pandemic preparedness through the development of appropriate diagnostic tests and influenza vaccine candidate viruses, if necessary[2].

Transmission

Swine influenza is transmitted from person to person by inhalation or ingestion of droplets containing virus from people sneezing or coughing; it is not transmitted by eating cooked pork products. The newest swine flu virus that has caused swine flu is influenza A H3N2v (commonly termed H3N2v) that began as an outbreak in 2011. The "v" in the name means the virus is a variant that normally infects only pigs but has begun to infect humans. There have been small outbreaks of H1N1 influenza since the pandemic.[1]

Structure of Virus

Influenza viruses belong to the Orthomyxoviridae family and are divided into three classes: A,

B and C. They are spherical particles with a diameter of 100-200 nm. The viruses are enveloped with two surface antigens, Hemagglutinin (HA or H) and Neuraminidase (NA or N). Hemagglutinin, which is the major projection on the influenza virus surface, binds to the host cell receptors and promotes the fusion between the virus envelope and the host cell, whereas neuraminidase is responsible for the release of progeny viruses by cleavage of the terminal sialic acid.[3] The influenza virus A has 16 different types of hemagglutinin (H1"H16) and 9 different types of neuraminidase (N1"N9). Recently, a novel type of hemagglutinin (H17) was identified in bats. Based on the combinations of hemagglutinin and neuraminidase types on the cell surface, the viruses are classified in diverse subtypes such as H1N1, H3N2 or H5N1[4]. Pigs are considered as the mixing vehicles for different subtypes.[5]

The core of influenza viruses contains a negative sense single stranded RNA genome that is composed of eight separate gene segments[3]. Two types of mutations can occur within the genome. First, an antigenic drift, point mutations within the genome causing mild changes in the surface antigens and thus creating a new variant of an existing strain. Second, an antigenic shift that is a new recombination of gene segments which can occur when a host is infected with influenza viruses from different species (human, birds, pigs), leading to a formation of a completely new strain.

Epidemiology

Many researchers now consider that two main series of events could have led to swine flu (and also avian or *bird flu* becoming a major cause for influenza illness in humans.

First, the influenza viruses (types A, B, C) are enveloped RNA viruses with a negative sense single stranded segmented genome; this means the viral RNA genetic code is not a single strand of RNA but exists as eight different RNA segments in the influenza viruses. A human (or bird) influenza virus can infect a pig respiratory cell at the same time as a swine influenza virus; some of the replicating RNA strands from the human virus can get mistakenly enclosed inside the enveloped swine influenza virus. For example, one cell could contain eight swine flu and eight human flu RNA segments. The total number of RNA types in one cell would be sixteen; 4 swine and 4 human flu RNA segments could be incorporated into one particle, making a viable eight RNA-segmented flu virus from the 16 available segment types. Various combinations of RNA segments can result in a new subtype of virus (this process is known as antigenic shift) that may have the ability to preferentially infect humans but still show characteristics unique to the swine influenza virus .It is even possible to include RNA strands from birds, swine, and human influenza viruses into one virus if a single cell becomes infected with all three types of influenza (for example, two bird flu, three swine flu, and three human flu RNA segments to produce a viable eight-segment new type of flu viral genome). Formation of a new viral type is considered to be antigenic shift; small changes within an individual RNA segment in flu viruses are termed antigenic drift and result in minor changes in the virus. However, these small genetic changes can accumulate over time to produce enough minor changes that cumulatively alter the virus' makeup over time (usually years).

Pandemic influenza occurs when a new emerging influenza strain turns out to be infectious to humans and transmissible to man. In the last century, three influenza pandemics occurred: A (H1N1) in 1918, A (H2N2) in 1957 and A (H3N2) in 1968. The most severe influenza pandemic was detected in 1918 with estimated 50 million deaths or more the highest mortality rate of any disease outbreak in the recorded history.[6]

In April 2009, a novel variant of the influenza A (H1N1) virus was identified in Mexico and caused a high reported case fatality ratio. In parallel, the new influenza strain was isolated also from individuals in the USA. The virus contained a unique combination of gene segments that had previously not been found among influenza viruses. Two gene segments of the new variant were derived from the Eurasian swine virus that originated from the avian influenza virus. Three segments came from the classical swine influenza virus. The remaining three gene segments were derived from the triple reassortant swine virus that originated from different lineages of avian viruses.

The infection spread fast around the world and on June 11, 2009, the World Health Organization (WHO) declared the global influenza A (H1N1) pandemic), the first one of the 21st century. The

pandemic H1N1 became the dominant influenza strain in 2009. However, most of the cases were mild and self-limiting and mortality was not as high as estimated. By the end of the pandemic (August 10, 2010), at least 18,448 laboratory-confirmed deaths were reported by the WHO as associated with the new virus strain.[7]

Preventive Measures

From a public health standpoint, for a vast majority of populations in developing and resource constrained countries, pharmacological interventions such as vaccines and antivirals do not play a major role, due in part to limited supply, lack of access and the high costs involved. Such countries will have to depend on various non-pharmaceutical interventions. Non-pharmacological interventions include the use of personal protective measures such as shielding one's mouth and nose while coughing or sneezing, frequently washing one's hands with soap, avoiding mass gatherings and voluntary isolation by symptomatic individuals. Personal hygiene, including hand hygiene, if observed properly, can be effective in preventing respiratory viral infections. Media strategies should aim at advising people to observe the basic rules of hygiene.

Currently, vaccine is available in various countries. Antiviral drugs are also available in limited supply, and should be used judiciously and where appropriate as they have their own inherent side effects. If the likelihood of complications is low, antiviral chemoprophylaxis should not be offered to individuals at risk for infection or to healthcare workers. If the likelihood of complications is high (either due to the strain or baseline risk of the exposed group), oseltamivir or zanamivir may be used as post-exposure chemoprophylaxis for affected individuals, especially healthcare workers.[8]

Neurological Complications

Influenza-related neurological complications are rare in immune-competent adults with variable clinical signs and pathology. However with the advent of serological testing, confirmed cases of influenza virus infection (A and B) have been found to be associated with seizures (febrile and non-febrile),[9] alterations in mental status ranging from confusion and lethargy to coma, acute inflammatory demyelinating polyneuropathy (Guillain-Barre syndrome), acute disseminated encephalomyelitis, transverse myelitis, abnormal movements, acute psychosis, frontal lobe syndromes, mutism, and visual hallucinations. These complications have been reported sporadically in the literature over the past 60 years. Recently, however, hundreds of cases of encephalopathy associated with influenza have been reported in Japan. In these series, a subset of patients (both children and adults) developed a newly described entity termed **"Acute Necrotizing Encephalopathy"** (ANE)[10]. Many patients with this syndrome present with high fever, seizures, and alterations in mental status that rapidly progress to coma. Brain imaging often demonstrates symmetric white matter, thalamic, basal ganglia, and/or pontine involvement. Neuropathologic studies on autopsy tissue show necrosis in these areas, and the lesions are often associated with punctate hemorrhages. Permanent and severe disability or death often results. ANE has been associated with several viruses, but influenza viruses seem to be the most common infectious agent[10]. Another neurologic manifestations of influenza known to occur includes acute disseminated encephalomyelitis (ADEM).

The pathogenesis of neurological complications is not well understood and has not been elucidated so far. It is most likely caused by a para- or post-infectious immune mediated mechanisms rather than direct viral invasion of the brain and the spinal cord.[11]

This mechanism is well supported by several observations including absence of the virus RNA in the CSF in most studies. Another hypothesis is the correlation of the severity of some neurological complications with the concentration of pro-inflammatory cytokines. These cytokines can induce vascular endothelial injury, increase blood-brain barrier permeability, induce apoptosis of cells (both neurons and glia) and cause acute edema and necrosis involving both grey and white matter .The last observation is the occurrence of several cases of ADEM which is a well-known autoimmune demyelinating disease.[12]

Psychiatric Association

Influenza virus is known for its respiratory signs and symptoms and we have discussed the neurological manifestations in the section above.However, the psychiatric manifestations of this disease still needs to be elucidated.There are

case reports of acute psychosis following influenza infection.[13] The acute manifestations of swine flu are simply the behavioral reactions, misdiagnosis/ over-treatment and other acute neurological manifestations. In a nationwide cross-sectional telephonic survey of 997 adult citizens of England, Scotland, and Wales after swine flu was declared as pandemic, a study group[14] found significant behavioral changes (as precautionary measures) such as following 'some recommended behavior' (increases in hand washing and surface cleaning or plans made with a "flu friend") in about 38% of participants over the past four days, and nearly 5% carried out 'some avoidance behavior' (engaged in one or more of six behaviors such as avoiding large crowds or public transport). These behavioral changes were correlated with a high level of anxiety. There is a report of misdiagnosis at the height of the fear of the swine flu pandemic even for a case of sore throat and prescribed unnecessary oseltamivir by health professionals There is a report of bizarre neuropsychiatric behavioral changes in one adolescent with novel H1N1.[15]

Parkinson's disease

The earlier linkage of Parkinsonism with influenza infection was reported after the 1918 influenza pandemic with observation that a number of people showed diminished mobility and other neurological symptoms suggestive of Parkinson's disease (PD). Subsequent evidence is also available for this linkage from epidemiological data and findings of the presence of Type A influenza antigens in *Encephalitis lethargica* (EL) patients. The lack of viral RNA from brains of post-encephalic Parkinsonian patients[16] and the absence of any known mutations of direct infection[17] are the major drawbacks in understanding the role of influenza as a Parkinsonian agent.In a recently published animal study[18] elevated levels of alpha-synuclein, loss of 17% dopaminergic neurons in the substantia nigra and persistent inflammation in areas of the brain infected with H5N1 influenza strain have been reported. All experimental mice developed tremors and movement difficulties suggestive of PD. However, there is no report of PD in human survivors of the H5N1 flu so far and it is too early to know whether those infected are at an increased risk as only a few years have passed since the report of the first cases. Researchers also acknowledge that 70% or more loss of dopaminergic neurons is required for full-blown PD to manifest and the observed 17% reduction in dopaminergic neurons alone may not be sufficient to cause PD, but it may make the brain more susceptible, especially in combination with other factors such as genetic, other environmental triggers, or simply old age.

Schizophrenia

A British study[19] first reported "mental disturbances" in 80 patients of influenza admitted in a psychiatric hospital, of whom 16 were diagnosed with delirium, 25 with dementia praecox, 23 with "other types of psychosis," and 16 who could not be classified. He considered that the Spanish pandemic of influenza (1918) could have led to the development of dementia praecox, but neither he nor his contemporaries raised the possibility of influenza as an etiological agent for schizophrenia that could occur *in-utero*.In subsequent studies, a high prevalence of schizophrenia was documented in children born in winter and early spring that witness influenza infections.[20] Approximately 50% of studies have reported positive associations among 25 incidence studies of schizophrenia in the offspring of women who were thought to have contracted influenza during pregnancy[21]The reliability of the documentation of exposure about maternal influenza in these studies are questionable as it is generally based on self-reports of participants or on occurrences of influenza epidemics contemporaneous with their pregnancies. To counter this problem, an American study[22] analyzed influenza antibodies in a case-control study in a population-based birth cohort (in sera drawn from pregnant women whose children later developed schizophrenia, and compared with a matched control group of women whose children did not develop schizophrenia) and found a dramatic sevenfold increase in the risk of schizophrenia among the offspring of women who were exposed to influenza during their first trimester of pregnancy, but not during the second and third trimester. The data collected from actually infected pregnant women in two studies have found no increase in risk of schizophrenia among their children. Polymerase chain reaction-based studies in pregnant women have not detected influenza virus-specific nucleic

acid sequences in brain tissue or CSF[23]. These evidences along with indirect evidence from animal studies suggest that human influenza viruses may have caused inherent immunological distortions in mind.[24]

Dementia and mental retardation

An Asian study [25] reported a case of progressive dementia and prolonged gait disturbance after initial presentation of delirium correlated with serologically confirmed influenza A/H3N2 infection in a 91-year-old female patient. Increased risk of mental retardation (MR) was observed in adulthood in children of prenatal exposure to Hong Kong flu[26] during the winter of 1969-70 especially in third to fourth month of gestation.

Depression

A retrospective Australian study with participation of 2514 adolescents/young adults reported an increased prevalence of suicidal and depressive symptoms in people who were born during flu peak in the Southern hemisphere, in comparison with those born in the Northern hemisphere,[27] but a prospective study by influenza antibody titer disapproved this correlation.

Mania

A case of mania induced by influenza B infection has been reported with hypothesis of connection between the locus ceruleus and influenza virus.[28] Another study in Europe also reported a manic psychosis in influenza.

Bipolar disorder

In comparison with bipolar disorder, a case-control study found that the risk of occurrence of uniploar affective disorders is increased in people who were exposed to an influenza epidemic during the second trimester which supports the neuro-developmental hypothesis of affective disorder.[29]

Effects of antiviral drugs

Oseltamivir, a neuraminidase inhibitor, is the most commonly used and generally well tolerated medication for swine flu worldwide and encouraging results have been observed if treated within 48 h of detection. Oseltamivir (Tamiflu) is effective for treating both seasonal flu and H1N1 infection. Behavioral problems such as jumping and falling from balconies has been reported in young Japanese patients treated with oseltamivir[30] that led authorities to issue warning against the prescription of oseltamivir. A case of oseltamivir-induced mania was reported in an 18-year-old Chinese lady who was admitted for H1N1 in Hong Kong with family history of bipolar disorder.There is also a report of oseltamivir-induced delirium in a geriatric patient[31].In an internet-based cross-sectional survey,[32] 18% of oseltamivir-treated H1N1 UK schoolchildren had mild neuropsychiatric side-effects and reported one or more following symptoms: poor concentration/unable to think clearly, problems in sleeping, feeling dazed/confused, bad dreams/nightmares, and behaving strangely.In post-marketing surveillance of tamiflu, the following transient neuropsychiatric adverse effects were reported mainly from Japan: delusions, hallucinations, sleep problems, abnormal behavior leading to injury, convulsions, encephalitis and delirium to suicide (mainly documented in teenagers). US Food and Drug Administration (FDA) suggested that the increased reports of neuropsychiatric events in Japanese children are most likely related to an increased awareness of influenza-associated encephalopathy, increased access to Tamiflu in that population, and a coincident period of intensive monitoring of adverse events. These prompted the inclusion of precautions to the US product label for oseltamivir[33]A retrospective cohort study[33] funded by Roche (who make Tamiflu) noted a higher rate of episodic mood disorders among those aged 17 years and below receiving oseltamivir compared to those who received no antiviral treatment.There are many etiological mechanisms are proposed for neuropsychiatric side-effects of oseltamivir. A study hypothesized that oseltamivir carboxylase, the main metabolite of oseltamivir, has an effect on the CNS with a role in CNS development and impulse conduction. It was also found that oseltamivir increases the release of dopamine in the medial prefrontal cortex and may be the cause of abnormal behavior in young patients.[34]The genetic mechanism in the Japanese population may be responsible for the neuropsychiatric side-effects with oseltamivir including suicide. Clinicians are asked to closely monitor this potential side-effect of suicide in every patient, especially with a positive family or personal history of mental illness.Controversy exists

regarding whether neuropsychiatric manifestations are a result of influenza per se or side-effects of oseltamivir. A retrospective cohort study of influenza in 1 to 21 years from USA found that there was no evidence of increased risk of adverse neuropsychiatric outcomes among the study population treated with oseltamivir for influenza.[33]

Effect of vaccination

There are many reports of GBS identical to the subacute and chronic forms of polyradiculoneuropathy (very rarely) and subclinical myelopathies (a very few cases of) following vaccination for influenza. Among all these, GBS is a highly controversial side-effect in view of earlier reports of GBS due to influenza infection itself.Probably for the first time, occurrence of GBS with vaccine for influenza outbreak was reported in 1976 during a large-scale immunization campaign in New Jersey, USA which led to a cessation of this mass immunization. An estimate suggests that there was a risk of one additional case of GBS per 100,000 people vaccinated for influenza in comparison with background prevalence of GBS of 1–2·3 per 100,000 in the general population. 'Lancet Neurology[35] observes that the chances of detecting cases of GBS during the development phase are low since the number of participants in most clinical trials of vaccines against H1N1 is unlikely to exceed 1500. In view of reports of mass vaccination in this swine flu pandemic, the timely reporting and analysis of any neurological complications during the immunization period will be essential.However, preliminary data from CDC[2] (1 October- 24 November 2009) suggests that there are no substantial differences noted between H1N1 and seasonal influenza vaccines in the proportion or types of serious adverse events reported after FDA gave license for H1N1 vaccines on 15 September 2009. In light of the H1N1 pandemic, the WHO recommends continuation of surveillance of acute flaccid paralysis that may represent a useful means of monitoring GBS during the pandemic. In view of controversy of whether GBS is a part of influenza, or a side-effect of influenza vaccination and absence of clear evidence for either, WHO recommended collaborative active surveillance for GBS during immunization which might give better insight about the controversial etiology of GBS.The evidences for the involvement of the brain in the pathogenesis of influenza virus are available from animal studies. A study of the immunization of rabbits with certain H1N1 influenza viruses led to production of autoantibodies to a brain-specific protein of 37kDa, present in various species including humans These autoantibodies were produced only in the brain and not in other tissues. These antibodies were not elicited by other Influenza A or B viruses. In histological studies, the reaction with antiviral antisera was specific to gray matter and was confined to sera that recognized the 37-kDa protein. The binding of the antibody was prominent in regions comprising neuronal cell bodies in cellular layers of the dentate gyrus, hippocampus, cerebral cortex, and cerebellum and not detectable in myelin-rich regions, such as the corpus callosum. The 37-kDa protein, therefore, appears to be a neuronal antigen. Antibodies directed against this protein may be involved in the pathogenesis of one or more of the neuropsychiatric disorders that occur after infection with influenza.[36]

Conclusion

There are well-documented acute neuropsychiatric manifestations of influenza and swine flu like encephalitis/encephalopathy, seizures, RS, transverse myelitis, aseptic meningitis, and GBS. Among the chronic manifestations of influenza, the evidence for schizophrenia and PD require further scientific data. Suicide and GBS are the two controversial neuropsychiatric side-effects of antiviral drug oseltamivir and influenza vaccination respectively, undergoing post-marketing surveillance. Thus the neuropsychiatric manifestations implicated with the infection of influenza/swine flu, the relation between swine flu and neuropsychiatry, especially the chronic manifestations need to be explored further.

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Psychophysiotherapy

Physical and Mental Consequences of Cyber Sickness

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Introduction

The development of computers and information technology is perhaps one of the most dominating factors in the ever-changing working life of today.[1] India has been at the forefront of cyber world with IT industry developing into a major service provider.[2] The use of computers has become integral to talented net-savvy students as they become immersed in technology in both their academic and social networking. Technological advancement in cyber era though revolutionised the way of working but has ushered in a new genre of intensive occupational health hazards called as cyber health hazards.[3] Along with benefits of living in the modern digital world of computers, mobiles and internet, people are confronted with newer health challenges, specifically referred to as Cyber Related Illnesses (CRIs) which are actually the beginning of serious health concerns.[4] Maladaptive use of internet in mobiles and computers has lead to 21st century epidemics including various Internet Addiction Disorders (IAD) resulting in impaired psychological well-being, academic failure, reduced work performance and various musculoskeletal disorders.[4] Cyber health hazards, if ignored can prove debilitating and can cause crippling diseases forcing one to change one's profession.[5] By influencing levels of performance, they represent one of the leading causes of disability which affects not only individual, but organization and the society as a whole.[5] Current research regarding the impact of computers, mobiles and internet use on human life is inconclusive and leaves everyone free to speculate about awful or wonderful consequences of the growth of cyber world. India being the forerunner in the cyber world, there is an urgent need to understand the dynamics of these problems and prevent them from assuming epidemic proportions.[5]

A cross-sectional study among the IT professionals in Delhi reported 93% of subjects had one or more computer related problems, which is very high computer related morbidity. The common musculoskeletal symptoms reported were pain (55%), and stiffness (14.8%) and the common sites affected were neck (44%), low back (30.5%), wrist/hand (19%) and shoulders (12.5%).[6] Studies showed that among computer professionals, 30 % of musculoskeletal problems are related to neck which indicates serious ergonomic deficiencies in office computer workstation design, layout and usage. A positive corelation has been found between various neck disorders and work related risk factors, such as computer use in sustained non-neutral postures and prolonged static neck and arm postures, prolonged sitting, more working hours and workplace design.[1] The studies on adult work life had shown that computer-related activities cause neck pain and forward head posture (FHP) and strongly associates neck symptoms and FHP with low or high screen position, shoulder symptoms with high screen position, shoulder elevation in computer mouse users, neck pain with poor placement of keyboard.[7] Evidences have concluded staring all day at computers & mobiles accentuates poor cervical

alignment as head and neck are held forward relative to lumbo-pelvic region leading to forward head posture.[8] Living in a forward facing world with repetitive use of computers remote and mobiles leads to repetitive movements in a forward direction which strengthen nerve and muscle pathways to move that way more readily. This combined with poor ergonomic postures during computer work causes the body to adapt FHP. FHP exacerbates muscular tension and spasms around neck and shoulder resulting in over activity of upper cervical extensors and upper trapezius leading to muscle imbalances thereby causing upper cross syndrome.[9] Recently, it was reported that musculoskeletal symptoms (63%), ocular problems (68%) and psycho-social problems in the form of stress (44%) were the key health problems among the computer profe-ssionals.[10]

Work place risk factors of daily computer use include number of hours per week of computer usage, working in non–neutral body postures, increasing age, and being female. Generally non-neutral postures are considered detrimental.[2] In a systematic review, wrist-ulnar deviation, wrist extension, elbow flexion, shoulder flexion, as well as neck flexion and rotation were identified as specific risk factors for computer users. A growing body of epidemiologic evidence supports a causal relationship between repetition, force, posture, upper extremity musculoskeletal disorders.[6,11] The relative time spent in front of computers and the use of a computer mouse have contributed to the increasing burden of CANS.[12] The term CANS indicate work related "Complaints of Arm, Neck and/or Shoulder not caused by acute trauma or by any systemic disease" and are important cause of work disability. They were introduced as 'occupational cramps' or 'occupational myalgia' being associated with numerous occupations and work activities. Clinical features of CANS include severe and debilitating pain, numbness and tingling resulting in reduced productivity, inability to perform job tasks, and an increase in workers compensation costs.[12]

Physical and Mental Consequences of Cyber Sickness

I. Physical Consequences

1. Forward head posture ((FHP) and upper cross syndrome (UCS)[13]

It is a condition where skull protrudes forwards more than an inch over C_1 vertebrae (atlas), and defined as "carrying head forward of the centre of shoulder". It is caused by sustained loading of cervical spine in prolonged static and faulty postures. It is mainly characterized by increased upper cervical extension and increased lower cervical flexion. Also called as loading disorder, text neck and readers neck and is one of the most important cause of mechanical / postural neck pain, non specific neck pain . Associated with this is upper cross syndrome which is a muscle imbalance pattern where as a consequence FHP, some muscles become inhibited whereas others become tight. There occurs over activity / tightness of suboccipital extensors trapezius, levator scapulae, sternocleido-mastoid, pectorals and reciprocal weakness, inhibition and lengthening of deep cervical flexors, lower trapezius and serratus anterior. UCS (upper crossed syndrome) is mainly characterised by forward head posture, increased thoracic kyphosis, scapular protraction and excessive upper and middle cervical extension.

Symptoms

FHP reduces cervical lordosis, pulls the entire spine out of alignment and leads to additional thoraco lumbar problems, and accelerates disc and vertebral degeneration[13]. Muscles of the upper back continually overwork to counterbalance the pull of gravity on the forward head resulting in the overstraining of neck muscles along with decreased blood circulation and lactic acid accumulation resulting in symptoms including neck and shoulder pain, muscle spasms, tension pains like cervicogenic headaches and giddiness and nerve impingements. Lower *cervical vertebrae* slightly shear forward relative to one another as a result of the persistent pull of gravity on a forward head. Prolonged shearing irritates the small facet joints as well as the ligaments and soft tissues resulting in neck pain that radiates down to the scapulae and upper back, potentially causing trigger points in the muscles, which are points of exquisite tenderness that are painful to touch, along with limited range of motion. Upper and middle cervical extension of UCS leads to tightness in suboccipitalis which further leads to local irritation to upper cervical spine. This interacts with descending tract of trigeminal nerve leading to cervicogenic headache and giddiness. Other

manifestations include compressed thoracic cavity, reduced overall height, sleep apnea, mouth breathing, insomnia, decreased lung capacity by 30% myofascial pain syndromes, interscapular pain, rounded shoulders and impingements and temporomandibular joint dysfunctions.

2. ***Occupational Overuse Syndrome/Repeated Stress / Work related upper limb disorders***[4]

These are a group of conditions affecting upper limbs as a result of occupational overuse or repetitive stress. Factors include awkward postures, repetitive movements, prolonged muscle tension, forceful holding or movement, poor ergonomics, poor work practice, psychological factors and Cold temperatures of air conditioners. Main disorders includes Tenosynovitis (including De Quervain's syndrome), Trigger finger or thumb, Rotator cuff syndrome, Carpal tunnel syndrome, Writer's cramp, epicondylitis, bursitis and synovitis, Cervical radiculopathies etc.

Symptoms

- Recurring myalgias or soreness in shoulders, neck, upper back or hands and wrists
- Tingling sensation in fingers, wrists, numbness, coldness or loss of sensation
- Weakness leading to loss of grip strength, and inability to hold things & wear clothes
- Muscles of arms and shoulder feel hard, swollen, tender and wiry when palpated
- Pain or numbness while lying in bed.

3. ***Computer Vision Syndrome***[14]

Computer vision syndrome describes a group of ophthalmic symptoms and problems that result from prolonged computer use. Common symptoms include : tired, irritation, burning or itchy, watery or dry eyes, blurred or double vision, headache, heaviness of eyelids or forehead, photophobia, difficulty in focusing, trouble shifting focus between monitor and paper documents, colour fringes or afterimages.

II. Psychological Problems

Research centred in cyber world has described various psychological reactions on organisational behaviour such as anxiety, perceived higher work pressures, job dissatisfaction and ambiguity about job demands.[15] Studies have focused on stress faced by cyber professionals because of the rapid obsolescence of technical skills and demanding user support requirements. Psychological problems can be:

1. Techno stress[15]

Technostress has been defined as "a modern disease of adaptation caused by an inability to cope with new computer technologies in a healthy manner".[16] There is practitioner evidence that technostress results in perceived work overload, demoralized and frustrated users, information fatigue, loss of motivation, and dissatisfaction at work.[17]

2. Mental stress and Job Stress[15]

Stress is the psychological, physiological and behavioural response by an individual when they perceive a lack of equilibrium between the demands placed upon them and their ability to meet those demands, which, over a period of time, leads to ill health.[18] Also**,** an increase in workload and/or responsibilities triggers job stress specifically for those who are not proficient with computers, but who must work with them. Symptoms include tension, restlessness, nervousness, anxiety, or inability to sleep at night because patient's mind is troubled all the time.[15]

3. Computer anxiety and computer phobia[19]

Computer anxiety describes the fear, apprehension, and agitation individuals may experience when interacting with computers[20]. These include the fear of hitting a wrong key and losing information or hesitation in using computers for fear of making a mistake.[21] Computer phobia happens when individuals are scared to use technology. It is a combination of anxiety about interactions with computer-related technology, negative attitudes about computers and negative cognition during actual computer use.[17] Computer anxiety describe the immediate physical reactions of technology users such as excessive caution and negative remarks about the use of computers, a sense of feeling hassled when using them, and attempts to minimize the necessary use of computers.[22]

4. Internet addiction disorder (IAD)[23]

Internet addiction disorder is the inability of individuals to control their internet use, resulting in marked distress and/or functional impairment in daily

life.[23] The diagnosis of IAD involves online and/or offline computer usage, and consists of at least three subtypes: (1) excessive gaming, (2) sexual preoccupations and (3) e-mail/text messaging.[24] Facebook addiction syndrome disorder (FAS/FAD) is a part of internet addiction disorder (IAD).[25] Scientists have found that compulsive internet use can produce morpho-logical changes in the structure of the brain with reductions in the sizes of dorso-lateral prefrontal cortex, rostral anterior cingulate cortex, supplementary motor area and parts of cerebellum in internet addicted students as compared to students deemed "not addicted".[26]

5. Dehumanization and loneliness[27]

Many people feel a loss of identity, a dehumanization effect because of computerization eliminating the human element that was present in the non computerized systems. People are encouraged to work and shop from their living rooms causing unfortunate psychological effects, such as depression and loneliness.

6. Depression[27,28]

Information anxiety can take several forms, such as frustration with our inability to keep up with the amount of data present in our lives, frustration with the quality of information available on the web, guilt associated with not being better informed, or being informed too late and anxiety from information overload (too many online sources) leading to depression.

7. Sleeplessness[30]

Spending more time than planned at the computer leads to time pressure, mental overload, and neglecting personal needs e.g., breaks, physical activity, social interaction, thereby causing sleeplessness. Getting stuck in unproductive activities such as "gaming," chatting and sitting up late in front of the computer lead to insufficient / dislocated sleep.

III. Social and Interpersonal Problems[27,28,29]

While computers have revolutionized every aspect of life, there has been mounting concern in the literature regarding the impact of computers on sociability and quality of life

1. *Familial Problems*: Marriages, parent-child relationships, and close friendships have been seriously disrupted by "net binges"[31] Marriages appear to be the most affected as internet use interferes with responsibilities and obligations at home, and spouse who takes on these neglected chores often feels like a "cyber widow". "Cyber affairs" are causing rise in divorce cases.[32]

2. *Academic Problems*: One survey revealed that 86% of responding teachers, librarians and computer coordinators believe that internet usage by children does not improve performance.[33] Another study found that 58% of students reported a decline in study habits, a significant drop in grades, missed classes or being placed on probation due to excessive internet use.[31]

3. *Occupational Problems*: Computer and internet misuse among employees is a serious concern among managers. One survey from the nation's top companies revealed that 55% of executives believed that time surfing the internet for non-business purposes is undermining their employees' on the job.

4. *Infertility*[34]: More and more computers and laptops usage leads to serious health risks including testicular damage, reduced spermatogenesis and infertility. It is due to increased temperatures in the groin region, which is due to leg positioning to support a laptop on the thighs, heat generated by laptop and direct contact between the thigh and testicles while working on computer for extended period.

Management

It is important to correct the physical ailments as soon as possible; because if ignored, it can cause serious health problems. Physiotherapy, through multidisciplinary approaches addresses both physical as well as mental well being of patients with cyber sickness.[35] Improvements to physical well-being can improve mental well-being and prevent the development of mental health conditions, such as depression which is often associated with other physiological conditions[36]. There is evidence that improvements in posture and flexibility are linked to a sense of improved security and better self-esteem,[35] Improvements to posture, for example, can benefit self-image and raise mood, in addition to decreasing back or neck pain. As well as preventing its onset, strong evidence also exists to suggest that an appropriate exercise regime effectively improves the well-being of people with depression.[37,38] It is accepted that people with mental

health conditions may take longer to respond to treatment, and it is acknowledged that enhancing physical health will promote mental well-being. Physiotherapy in mental health aims to optimize wellbeing and empower the individual by promoting functional movement, movement awareness, physical activity and exercises, bringing together physical and mental aspects.[39] Certain exercises increase serotonin and dopamine levels in the brain. These "feel-good" hormones regulate mood and behaviour. They reduce the perception of pain and help relieve migraines, headaches, and fibromyalgia. Serotonin has a direct impact on memory, focus, attention, aggression, and sexuality. Physiotherapy exercises relieve stress and boost cognitive function. In clinical trials, elderly patients who engaged in strength training experienced major improvements in mood and cognition. Other studies have found that exercise improves self-esteem and physical self-worth. It also enhances the body's ability to cope with stress and fight its harmful effects.[39]

Treatment Aims

Management includes preventing and treating both physical and psychological aspects of disease and includes psycho-physiotherapy treatment in addition to physiotherapy treatment. Physical therapy and psycho therapy treatment for mental ailments is discussed here keeping every aspect in mind.

Physiotherapy Aims

- Correcting the muscle imbalances by specific stretching and strengthening.
- Pain management by various electro-therapy and manual therapy techniques
- Correction of body mechanics by attaining and maintaining correct posture and performing postural correction exercises.
- Preventing various occupational myalgias and repetitive stress disorders by modifying life style through Ergonomic correction of workstation.

Psycho physiotherapy Aims: Include prescribing exercise programs

- To improve posture & body mechanics thereby improving self body image which helps in reducing depression
- To alleviate mood, promote wellbeing and address co-morbidities associated with mental aspects of cyber sickness.
- To motivate patients and promoting self-management.
- To address impaired body awareness and reduce disconnection from 'thoughts, feelings, memories or sense of identity thereby reducing social isolation
- To improve self esteem and confidence
- To improve insomnia

Management of Cyber Sickness

1. Physiotherapy Treatment for physical consequences of cyber sickness:

It includes both therapeutic measures and preventions.

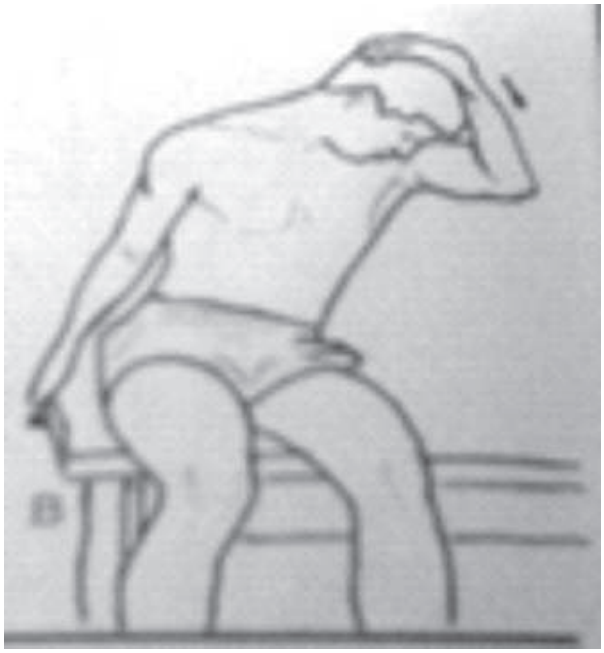
A) Therapeutic measures

1. Correcting muscle imbalances by stretching of tight/ tonic/ overactive muscles and strengthening of weak/ phasic inhibited muscles.

Stretching exercises :

- Sit upright and comfortably on edge of bed/ chair
- Hold seat of chair / edge of bed with hand on the side to be stretched
- Hold for 30 sec X 5 – 10 repetitions X 2 times a day

Levator scapulae stretch



Suboccipital stretch

Upper trapezius stretch

SCM stretch

Pectoral stretch

Strengthening exercises:

Chin tucks & chin nods (deep neck flexors)

Strengthening rhomboids

Lower cervical extensors

Middle trapezius

Lower trapezius

Serratus anterior

Repeat all these exercises 10 times X 2 times a day

2. Correction of body mechanics (Postural correction)

(a) Attaining correct posture

- It is attained by practising slouch over-corrected position
- Sit in fully relaxed position, move slowly into extreme of erect posture with lumbar lordosis at maximum and head fully retracted
- Extreme of good posture is impossible to maintain for long as structures on full stretch become painful, Patients are instructed to release last 10% of movement
- Repeat this 3times a day for 5-15 repetitions

b) Maintaining correct posture

- Consciously by keeping neck retracted and maintaining lumbar lordosis.
- Consciously by keeping chest open, head back and shoulders down.
- Keep shoulder blades 'tucked in'. When working with computers, don't stretch head forwards towards the monitor or hunch your shoulders.
- Use of lumbar support/ roll and NOT cushion inserted in small of bag.

c) Postural correction exercises (McKenzie's MDT approach)

- Neck retraction exercises (chin tucks) Moving head backwards from a protruded position so that it is oriented more directly over the spine. Repeat 5-15 times / 8-10 times/day (150 movements/day)
- Retraction extension exercises: Retraction followed immediately by extension followed by rotation in fully extended position (½ inch to either side). Repeat 4-5 times 10 reps of chin tucks followed by retraction extension X 5 sets X 2 times a day

B. Prevention

Cyber sickness is best prevented in early stages before it becomes difficult to control. Intervention may need to be multidisciplinary including

a) Ergonomic correction

- Ergonomic correction of workstation is mandatory at office and home.
- Arm rests should be used to relieve the neck muscles that would have otherwise suspended the weight of the arm while typing.
- Top of computer screen should be leveled with eyes, & about two feet away from face
- Learn to type without looking or at the very least take frequent breaks.
- Adjust chair and desk height so that legs are at 90^{O} angles to same.
- Chair should not put pressure on the back of legs.
- Proper distance of screen from eyes, use of anti glaring screen, special lens designs,

powers or coatings, frequent breaks may help to maximize visual abilities and comfort thereby reducing comparing vision syndrome.

- Vision therapy and eye exercises and frequent breaks help a lot.
- For dry eyes, consciously blink and apply use topical lubricants.
- Rest from activities, changing work practices, taking frequent work and rest breaks.
- Maintaining correct posture and avoiding prolonged, repetitive activity,
- Infertility can be prevented by proper leg positioning, methods of reducing heat conduction or fans, which may reduce the effects of extended periods of laptop use.

b) Remain active and maintaining general fitness Research has also shown that exercise causes endorphins to be released into body which helps to feel healthier and happier. Regular exercise, such as walking, cycling, swimming , aerobic exercises, cycle ergometry, calisthenics must be tried.

C. **Pain Relief**

It is achieved mainly by manual therapy and electro therapeutic modalities

(a) *Manual Therapy :* It consist of various Joint Mobilization techniques, soft tissue manipulations, Myofascial Release (MFRs) techniques, positional release techniques which help in reversing the forward head posture and its pain

(b) *Electrotherapy modalities :* This includes various low and medium frequency currents (IFT/TENS) which help in dealing with pain by stimulating nerves. High frequency currents like SWD/ MWD/Ultra sonic helps in increasing blood circulation, washing away of painful metabolites and performing micro massaging action(US) helps in better muscle relaxation and pain control thereby leading to increased compliance towards better stretching and strengthening exercises.

2. Psycho-physiotherapy treatment for mental aspect of cyber sickness

It includes Cognitive behavioural therapy (CBT), coping strategies and psychological support. Following interventions are best tried to relieve mental consequences associated with cyber sickness.

1. Cognitive behavioural therapy includes :
   - Relaxation skills, mindfulness based stress reduction.
   - Changing physical activity structure, breaking up the activity in smaller chunks, behavioural activation including graded & enjoyable physical activity
   - Cognitive restructuring including alteration of irrational thoughts; cognitive functional training, planning responses, trying out solutions.
2. Bio feedback – it gives awareness of physiology using objective devices; movement and body awareness, relapse prevention: self-monitoring, discussing triggers.
3. Incorporation of techno stress inhibitors which represent organizational mechanism potential to reduce the effects of techno stress. These include:
   - Training and guidance on how to use new systems, especially during early days, to help reduce anxiety and Planning and implementation phases
   - Job Satisfaction skills consisting of "a pleasurable or positive emotional state resulting from the appraisal of one's job or job experiences"
4. Prevention / Correction Internet Additions Content-control software and Counselling,
5. Coping & stress management strategies includes taking breaks from technology, Exercise at the computer desk in between tasks, setting realistic goals, learning positive imaging, meditation, listening to stress reduction tapes.
6. Deep breathing and Relaxation techniques
7. Hydrotherapy

Conclusion

Significant proportion of computer professionals facing computer related health problems denotes that the occupational health of the people working in the computer field should be emphasized as a field of concern in public health. The ergonomics of the working environment of the computer professionals have a direct impact on their well being. Hence the

organizations employing them, as well as the professionals themselves need to be sensitized regarding the importance of the regular exercises, postural corrections and proper working conditions. A combination of attaining & maintaining good posture, performing mobility, corrective and stretching exercises, taking frequent work breaks with proper ergonomics and adequate use of computers and mobile phones is the key to avoid cyber health hazards.

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Psychophysiotherapy

Effect of Modern Lifestyle on Mental Health and Role of Physiotherapy

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While modernity has provided multiple technological and medical advances including increased life-expectancy, it has come at a cost, in that a range of lifestyle issues are now negatively affecting our mental health.[1,2] Lifestyle is a way used by people, groups and nations and is formed in specific geographical, economic, political, cultural and religious text. It includes day to day behaviors and functions of individuals in job, activities, fun and diet.

People are increasingly becoming more sedentary with reduced physical activity and eating a poorer diet than previous generations. This, in combination with altered sleep/wake cycle, substance misuse and psychosocial factors such as more competition and time pressure, social isolation and less intimate engagement with the family, may exert a cost on mental health.[3] Modern Lifestyle includes reduced physical activity, junk food, reduced or disturbed sleep, smoking & alcoholism, drug abuse and various kinds of stresses. The overuse and misuse of the technology has also a significant influence on physical and mental health of human being. Problems like metabolic diseases, joint and skeletal problems, cardio-vascular diseases, hypertension, overweight and so on, can also be caused by an unhealthy lifestyle.

Mental health can be influenced by everyday behaviors i.e. our lifestyle which can be altered by an individual. About 12% of the global population is affected by mental illnesses, which contribute to the worldwide burden on socio-economic life of the people.[4] Prospective studies consistently find a bidirectional relationship between various lifestyle factors and physical as well as mental health, with important health improvements and wellbeing following relatively small changes in lifestyle.[5,6] According to Dariush[7]variables of lifestyle that influence on health can be categorized in following items:

- Diet and Body Mass Index (BMI):
- Exercise
- Sleep
- Sexual behavior
- Substance abuse
- Medication abuse
- Application of modern technologies
- Recreation

Unfortunately, due to modern lifestyle, world is adapting to a system of consumption of food which has several adverse effects on human health. Globalization has seriously affected one's eating habits and enforced many people to consume fancy and high calorie fast foods, popularly known as Junk foods.[8] Ailments like Obesity, food poisoning, dehydration, cardiac problems diabetes mellitus, and arthritis have seen a profound rise in developing countries and such unhealthy junk food, processed food, high fat calorie consumption are the notable factors to its contribution.

Physically inactive middle-aged women (engaging in less than 1 hour of exercise per week) experienced a 52% increase in all-cause mortality, a doubling of cardiovascular related mortality and a 29% increase in cancer-related mortality compared with physically active women.[9] Physical inactivity is a modifiable risk factor for cardiovascular disease and a widening variety of other chronic diseases, including diabetes mellitus, cancer (colon and breast), obesity, hypertension, bone and joint diseases

(osteoporosis and osteoarthritis), and depression.[10]

Advanced technology facilitates the life of human beings. Misuse of technology may result in unpleasant consequences. For example, using of computer and other devices up to midnight, may effect on the pattern of sleep and it may disturb sleep. Addiction to use mobile phone is related to depression symptoms. Prospective associations between high information and communications technology (ICT) use (mobile phones & computer use) & reported mental health symptoms among young adult college students.[11] This so called Techno stress can result in sleep pattern problems, depression, addiction, 24/7 stress, FOMO "Fear Of Missing Out", isolation, insecurity, anxiety.[12]

Sara et.al concluded that frequent mobile phone use is associated with stress, sleep disturbances and symptoms of depression among the young adult men & women. Prospective analysis indicated that high frequency of mobile phone use could be a risk factor for developing sleep disturbances in men & symptoms of depression in both men & women.[13] Thomee etal stated that time spent on general computer use was prospectively associated with sleep disturbances for men. For women, using the computer without breaks was a risk factor for several mental health outcomes. Using the computer at night and consequently losing sleep was associated with most mental health outcomes for both men and women.[14]

There can be different causes of stress or mental illness in different age groups. For example, the cause for stress in childhood can be poor parent-child relation, parent's divorce, activity overload, peer pressure etc. Adults can have workplace stress, family stress, financial problems, work-life balance etc. Adults may face problems due to economic insecurity, death of spouse, elderly abuse and social isolation. Many women face the additional stresses of work and home responsibilities.

The mental manifestations of such lifestyle related problems can be:

Acute

- Uneasiness & Worry
- Feelings of Sadness
- Emotional Distress
- Low self esteem
- Irritability
- Hopelessness
- Stress
- Anxiety

Chronic

- Chronic Pain
- Anxiety and
- Panic Attacks
- Metabolic diseases
- Depression
- Psychosomatic
- Problems
- Sleep disorders
- Eating
- Disturbances

As a result unhealthy lifestyle can cause various physical health problems like metabolic diseases, musculoskeletal problems, cardiovascular diseases, respiratory disorders, stroke and so on.[15] These problems along with various mental health problems and psychosocial factors like more competition and time pressure, social isolation and less time with family can cause illness, which can further lead to dysfunction and disability.

Theoretical framework

There is a heuristic theoretical framework explaining why the modern lifestyle may be impacting mental health. Obesity, poor diet, poor/ decreased sleep, exposure to chemicals and pollutants, and high stress levels may potentially disrupt the hypothalamic pituitary adrenal axis, increase cortisol and increase low-grade systemic inflammation and oxidative stress.[3] Specifically, increased levels of pro-inflammatory cytokines, interferon gamma and neopterin, reactive oxygen and nitrogen species and damage by oxidative and nitrosative stress, in combination with lowered levels of antioxidants, may potentially damage mitochondria and mitochondrial DNA; this may result in neuro-degeneration and reduced neuro-genesis.[16]

Aspects of a healthy lifestyle, such as regular physical activity and better dietary habits, are important in reaching desired physical fitness. Healthy lifestyles are more influential than genetic factors in reducing the risk of various coronary heart diseases, cancer and diabetes.[17]According to Khaw, differences in just four lifestyle factors of smoking, physical activity, alcohol intake and diet can make a

major difference in health status.[18]According to Julia et.al., lifestyle behaviors including physical and mental activity, alcohol consumption, smoking, life rhythm and body mass index are individually predictive of life satisfaction, depression, anxiety, and stress. Healthy lifestyle seems to have an additive effect on mental health. It can help in reducing depression and anxiety, lowering psychological distress, increasing life satisfaction and improving self-perceived mental health [19]

Physiotherapeutic Intervention

Involvement in structured exercise has shown promise in alleviating symptoms of clinical depression. Since the early 1900s, researchers have been interested in the association between exercise and depression. Early case studies concluded that, at least for some, moderate-intensity exercise should be beneficial for depression and result in a happier mood.[20,21]

While structured group programs can be effective for individuals with serious mental illness, lifestyle changes that focus on the accumulation and increase of moderate-intensity activity throughout the day may be the most appropriate for most patients.[22]

Physical activity has the potential to improve the quality of life (QOL) of people with serious mental illness through 2 routes ie. improving physical health and alleviating psychiatric & social disability.

PHYSICAL GOALS

- Non pharmacological mgmt of pain
- ↑ Muscle Strength & Flexibility
- ↑ Cardiovascular Endurance
- Advice on weight mgmt
- Increase Mobility & functional status
- Initiate better sleep patterns

PSYCHOLOGICAL GOALS

- ↑ Self esteem &Confidence
- ↓ Stress
- ↑ Mood & promote wellbeing
- Motivate patients & ↑ self management
- Promote +ve Body image
- ↓ Social isolation
- Address impaired body awareness

Exercise and Mental Health

– Reduces stress and improves mood
– Increase serotonin, endorphins
– Improve self confidence
– Prevent cognitive decline
– Better Sleep
– Increased relaxation
– Alleviate anxiety
– Increased energy & endurance
– Improved cardiovascular fitness

The mental health benefits of physical activity are independent of factors like chronic illness, obesity and smoking. Regular physical activity is thought to be associated with better mental health. Prospective cohort studies have generally showed inverse associations between physical activity and incident depression.[23]

Mediating factors

The common mediating factors that contribute to antidepressant effects of exercise are physiological, psychological and neural plasticity. Exercise also induces cellular energy flux, hormone levels, muscle stretch and intracellular calcium ions, together activates intermediate genes which activates PGC-1α. Coactivation of transcription factor cascades oxidative capacity, glucose transport and insulin signalling, glucose and lipid metabolism and hepatic glucogenesis. These improve metabolic homeostasis and reduce diabetes risk. Therefore, establishing firm evidence for gene-lifestyle interaction is important to elucidate the links between lifestyle and health status, not necessarily illness, and thereby identify those people most at risk and provide early and effective lifestyle interventions.[24] Given that heightened responsiveness to daily stressors is a risk factor for psychological morbidity, physical activity may also improve mental health by reducing biological stress reactivity.[25]

These improvements in mood are proposed to be caused by exercise-induced increase in blood circulation to the brain and by an influence on the hypothalamic-pituitary-adrenal (HPA) axis and, thus, on the physiologic reactivity to stress. This physiologic influence is probably mediated by the communication of the HPA axis with several regions of the brain, including the limbic system, which controls motivation and mood; the amygdala, which generates fear in response to stress; and the hippocampus, which plays an important part in memory formation as well as in mood and motivation.[26]

Exercise prescription and recommended level of physical activity

American College of Sports Medicine (ACSM) recommends minimal exercise program for atleast 20-60 mins exercise session, three sessions each week. According to Hamer et.al. the mental health benefits were observed at a minimum physical activity level of at least 20 min/week of any type of activity.[23]Early work by Paffenbarger et.al. revealed that regular physical activity (expending > 2000 kcal [8400 kJ] per week) was associated with an average increase in life expectancy of 1 to 2 years by the age of 80 and that the benefits were linear even at lower levels of energy expenditure.[27]

In a Harvard alumni study, men who expended 1000–2499 or ≥ 2500 kcal/week were 17% and 28% less likely to develop clinically diagnosed depression compared with men who expended <1000 kcal/ week.[28] Australian women who performed 2–3 sessions per week or daily moderate intensity activity had approximately 20% and 40% reductions, respectively, in the risk of subclinical depressive symptoms after 5 years of follow-up.[29]

According to Kupfer, for progress to be made, exercise scientists should consider organizing physical activity or exercise treatments for mental health disorders such as depression or anxiety into three distinct categories. These include use of exercise treatment as a monotherapy, augmentation therapy, or adjunct therapy, an organizational scheme promulgated by the mental health treatment community. Also, within each of these categories, the treatment process should be characterized clearly as having three successive states:

1. Acute phase treatment that lasts for 8 to 12 wk with the goal to achieve a response to treatment (30%-50% reduction in symptoms) or remission (very much improved or symptom level in the normal range on a standardized assessment)
2. Continuation phase treatment that lasts for 4 to 12 months with the major goals of preventing relapse and to further improve functioning
3. Maintenance phase treatment that can last beyond 1 year to ensure that the disorder does not recur. Severity of the disorder also should be taken into account to ensure safety and appropriateness of treatment for patients.[30]

Individual tailored interventions incorporating the following exercises can be used while designing the physical activity program:

- Relaxed Deep breathing
- Muscle flexibility exercises
- Relaxation techniques
- Endurance training
- Biofeedback
- Ergonomics
- Muscle strengthening
- General mobility exercises
- Balance & Equilibrium training
- Reeducation of Posture
- Gait Training
- Electrotherapy modalities for Pain reduction

Guszkowska studied the effects of physical activity on emotional states of anxiety, depression and mood and found positive effects after 15-30 minutes of physical activity, including rhythmic, aerobic exercises of moderate & low intensity performed 3 times per week for10 weeks.[26] Lifestyle modifications can assume especially great importance in individuals with serious mental illness.[22] modifications like healthy eating including fatty acids-omega 3 & 6, amino acids, exercising for 20- 30 minutes a day for three to five days a week, meditating and relaxing, having adequate sleep, healthy relationships and stress management can help improve mood and prevent mental problems.

Conclusion

Physiotherapy can be used as a measure for preventing the risk of mental health problems. Physiotherapist acts as a facilitator for improvement of mental health in conjunction with physical health. Following healthy lifestyle that promotes psychological wellbeing can be crucial in preventing mental disorders. Lifestyle modifications could be a cost-effective way to improve health and quality of life.

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Commentary

Faith Healers and Mental Health — Some insights

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Introduction

This article attempts to break ground by considering the role of faith healers in the process of delivery of clinical mental health care to patients. Clinical experience suggests that considering faith healers can be important in treatment. In an era of burgeoning neuroscience research emphasis, there seems to be today an increased interest in the neurobiological basis of faith in mental health.[1] There are attempts to see faith and religion from the perspective of developmental psychopathology as well as in the form of risk and protective factors in the developmental of mental illness. The competent psychiatrist is a diagnostician, healer, physician and therapist all in one. Religion and spirituality with faith-healing that may ameliorate distress must be a part of the psychiatrist's armamentarium.[2] It is different that sometimes these factors may be the cause of distress to the patient. It is our attempt to bring some structure and clarity to this complex area. Mental health professionals may find approaching these areas awkward, but we must discuss these things because of their inherent interest and importance in our patient's everyday life. Multiple factors have assisted in the development of this commentary. Part of it is literature based while part of it is based on the clinical experience of the authors.

Faith Healing

Faith healing is the practice of prayer and gestures that are claimed to elicit divine intervention in the healing of illnesses. Believers assert that the healing of disease and disability can be brought about by religious faith through prayer and/or other rituals that, according to adherents, stimulate a divine presence and power.[3] These beliefs find their essence in religious practices and beliefs. The cure to various illnesses have had a historical claim in the techniques and methods based on faith healing that encompass prayers, visiting religious shrines, divine intervention or merely a strong belief/faith in a supreme being.[4] A part of faith healing encompasses the fact that illness is caused by demonic possession and faith healers play a role in removing the demons within a patient to cure him or her.[5]

Faith Healing in India

In India, mental illness is often believed to be the result of a curse, a demonic possession, black magic or the earned karma for misdeeds in a past life.[6] With more than 60 million people suffering from common and severe mental health disorders and an insufficient number of mental health professionals across the nation, faith healers from across India's diverse religious mosaic have long automatically filled this gap before a patient seeks medical intervention.[7] Sometimes the patient may seek faith healing and psychiatric treatments simultaneously and very often respond faster to psychiatric treatments when approved by the faith healer.

Faith healers are an essential link of the comprising network of global mental health practices.[8] Sometimes failure of faith healing may prompt psychiatric intervention and thus help the patient reach the right treatment course. Sometime the faith healing practices may themselves cure the patient without any psychiatric intervention and in many cases there is a simultaneous ongoing of both treatments with concomitant beneficial effects.[9] There are few research studies that have deliberated on the useful coalition of mental health professionals and faith healers in the diagnosis and treatment phases of mental health problems. However, research spanning the last five decades are

suggestive of the role of faith healers in effective psychosocial interventions for mental health problems.[10] It is paramount to emphasize here the power of prayer in alleviating anxiety and depression.[11] Faith based interventions and healing works best when done keeping the patient's best interests in mind and when it is done without any physical harm and without physical and sexual abuse of the patient.[12]

Faith Healers and Mental Health Care in India

In a country, dominated by spirituality and religion, we are always seeing patients largely turning to faith and spiritual healing as means of cure for both physical and mental illnesses. With time, they have had exposure and access to medical care as well as mental health professionals. It is essential to not always look at faith healers negatively and debunk the myth on the malpractice of faith healers while shedding some light upon their important contribution in bringing patient of mental health into the treatment phase.[13] Faith healers play an important role to engage patients into prayer and faith as means of healing and further direct them to the medical treatment that they quintessentially require.[14] There have been innumerable psychiatric consultation and psychotherapy referrals seen by both authors that have been made by faith healers and priests of various religions and faiths. Many faith healers and priests also never fail to seek psychiatric help when they face depression or burnout and stress in their work.

Integrating Faith Healers into Mental Health Care

It is indeed a picture of glory to see a tied practice of faith, prayer and medication help psychiatric patients recover from mental illnesses. It is no more unusual for faith healers to engage their patients in prayer and ritual, and then to lead them to a psychiatric doctor. Similarly, the psychiatrists are careful to show respect for the work of the faith healers, who in turn often pray over medications, enabling the work of mental health professionals smooth and effective and they even serve to enhance compliance on the part of patient with respect to various psychiatric treatments.[15] Patients with serious mental illnesses in developing countries seldom receive formal psychiatric treatments and therefore traditional healers continue to have a substantial role in mental health-care delivery, taking care of substantial needs of the patient.[16]

The debate regarding the legitimacy and status of traditional healers within existing health systems is ongoing. Many countries acknowledge the potential usefulness of traditional healers for treating mental health problems, and are attempting to incorporate these healers into their own formal health-care systems as is occurring in nations like Indonesia, South Africa, Bali, Uganda, Papua New Guinea, New Zealand, Canada, and the USA.[17] Notably, minority populations in high-income and developed countries also persist to use their own traditional healing systems as part of the mental health care provision. High rates of traditional healers have been recorded in the treatment of mental health problems in North American Indians, Chinese immigrants in Canada, Pakistanis in Britain, Bangladeshis in London, Turkish people in Germany, Hispanics in the USA, South-East Asian refugees in the USA, and Muslims in the UK.[18] In fact it is a matter of debate whether psychiatrists must train faith healers akin to training general practitioners in detecting mental illness so that appropriate referrals occur along crisis management and supportive counseling so that they may handle minor emergencies.

Role of Faith Healing in Promoting Mental Health

Religion and spirituality hold a place of value in aiding psychiatric diagnosis. Self-help and support, including by a faith community and its leaders, can be very important to an individual's coping, recovery and well-being. Studies show that people involved in a religious or spiritual group of some kind have a lower risk of premature death or illness as well as relapse than those not involved.[19] The reasons for this apparent benefit are not well understood. But the fellowship, goodwill, and emotional support offered by religious or spiritual groups may also promote healthy living and mental health.[20] Certain faith communities offer pastoral counseling services, which can be an additional support to therapy and/or medication, and may help people cope with mental health challenges. Such supported and alternate therapies have been seen to be successful in the recovery process and they carry a powerful message of hope.[21]

Conclusions

In the global scenario of mental health care system, faith-healers continue hold a place of importance among people who suffer from mental illnesses. Their means and methods of entwining hope, spirituality and essence of life along with traditional forms of treatment hold a considerate amount of appeal for the people. In the context of Indian mental health services, faith healers are a substantial link that are a component in bridging the treatment gap, especially so in rural backgrounds.[22] In a land of spirituality and religion, people have been attributing firm belief to the traditional systems since age old time of our ancestors and continue to do so. With time, faith healing and traditional means of treatment for mental illnesses have taken a leap ahead by conglomerating with the mental health professionals, creating a professional cum traditional approach to diagnosis and treatment. Given that the practice is carried out with a sensitive approach, it can bring benefit to a larger mass of people throughout the country and in the larger picture, the globe.

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View Point

Psychological Angle of Pan-Ethnicity

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Introduction

Race and ethnicity the two terms have always been at the centre of attention in the fields of social and behavioural sciences. In the era of globalization, the issue ethnicity is a very pertinent issue for multi-ethnic cosmopolitan society.[1] The term 'pan-ethnicity' entails recognition of ethnic and cultural diversity within its boundaries and sub-culture of an ethnically minority group of a larger cosmopolitan culture. American Sociologist Yen Espiritu coined this term for describing socio-political behaviour and attitudes of the Asian Americans in USA. In multicultural and cosmopolitan society, pan-ethnicity has significant importance. Pan-ethnicity moderates the interracial transactional dynamics and the process of acculturation and enculturation of the cultures of the immigrants in the host society. It is often used to explain the specific political behaviour of ethnically minority groups in the multi-ethnic cosmopolitan societies. In those societies, ethnic minority groups often show considerable internal heterogeneity based on national boundaries.[1-3]

For the pan-ethnic group, boundaries expand beyond national origins to encompass a wide range of groups perceived to share some similar types of structural or cultural traits[4] but do not override the ethno-national lines. Pan-ethnicity is a component of multidimensional group consciousness in divergent host culture.Additionally, ethno-national boundaries continue to remain significant for groups sharing a pan-ethnic marker, being facilitated by continuing immigration streams as well as by contact between ethnic groups that serve to underscore their differences as much as their commonalities.Pan-ethnicity enwraps various diverse ethnic or national groups and through the *psychological solidarity* and that is done on 'politico-cultural issues' related to their interests.[4-8] This construct had come as the outcome of Civil Rights Movements of 1960s. In those movements' two ethnic groups, e.g. Asian Americans and Latinos, comingled during the 1960s civil rights era.[8,9] In USA, Caribbean immigrants with Caribbean, Cuban, Mexican and Puerto Rican backgrounds tend to identify themselves with native-born blacks or Mexican American, Cuban American or Puerto Rican American in both colour and ancestry. However, at other times, these people resist racial categorization and emphasize ethnic identities that are culturally different from American blacks[10-12]. These people easily identify themselves as 'Black' or 'Latino Origin' in broader sense, although their ethnic identifications are often complicated by the differences in their languages (English vs. Spanish or Spanish vs. non-Spanish speaking) and immigration histories. Along with observable contextual factors, individualized socializing factors do play important roles in influencing the externalized behavioural qualities and psychological attitudes of ethnically minority groups. Those factors can be 'pan-ethnic self-identification', 'discrimination experience', 'and birth place 'and 'language proficiency'. These factors can have potential importance in forming attitudes of those people at the individual level. In Multi-ethnic cosmopolitan societies, many of these people tend to view and react to the world in a distinctive manner, probably because of their socially imposed identification categories, perception of discrimination, and speaking of different languages in communicating with other members of the host society.[10-14]

Understanding Pan-ethnicity in Context of Modern Globalized World

While describing pan-ethnicity, Espiritu [2]gave emphasis on processes of "categorization", or

"agglomeration". In these two processes different national groups are given a single ethnic label in a multiracial and multi-ethnic society. Lopez and Espiritu[4] argued that structural commonalities-among which they include race, class, generation and geography, are a better field for rise of pan-ethnicity than a shared culture. Supporters of 'global culture' describe Pan-ethnicity, as the important process through which multiple ethnic groups come together and form a new, broader grouping and identity and this process is often referred as predecessor of modern confluent culture or cosmopolitanism. Clearly, distinct ethnic and immigrant groups can be part of the same racial, religious, or territorial category, and they may subscribe to or act upon expansive identities and labels. When different ethnic groups come to share interests and a collective history and build institutions and identities across ethnic or cultural boundaries, the result is pan-ethnicity. The development of pan-ethnic identities is a salient phenomenon within multi ethnic societies and is an integral part of the social and political landscape of the United States. Scholars have used the term pan-ethnicity to describe when different ethnic or tribal groups cooperate, organize and build institutions and identities across ethnic boundaries.[2,4,14] Pan-ethnicity is not simply an American phenomenon; it is also present across the globe. The Kikuyu in Kenya, the Moro in the Philippines, the Igbo in Nigeria, and the Malay in Malaysia were formed from smaller distinct groups on the basis of caste, religion, ancestral place of origin, and religion.[16] Likewise, the Roma community is broadly composed of persons who hail from Romania, Spain, Bulgaria, and other European nations.[17,18] Moreover, several national identities such as Singaporean, Chinese and Indian are certainly pan-ethnic as they represent a conglomeration of different ethnic identities.[17,18] In each of these cases, ethnic or tribal groups came together long ago to form broader groupings, and today they share kin, interest, or cultural traditions across these lines. Pan-ethnicity is characterized by an acknowledgment of subgroup diversity as well as a broader sense of solidarity.[17-19] In multiracial and multi-ethnic society like USA, some groups try to broaden the ethnic group boundaries to form a new, wider grouping and identity, and this particular strategy is done either for political mileage or for establishing a cultural identity. Pan-ethnicity is used as a political strategy for increasing the memberships, which is required to create a pressure on administration for fulfilling demands. Pan ethnic identity is also used for shaping the everyday interactions of ethnic minority groups. In USA, some individuals adopt a pan ethnic identity because it enables them to feel like they are part of a larger cultural group whose shared experiences help them operate educational institutions, workplaces, neighbourhoods, and everyday life more efficiently. Because, in many cases they are being put under racial category, such as Asian or Latino, and being stereotyped—as foreign, as a model minority, as undocumented—contribute to the building of a cultural community. For some, adopting a pan ethnic identity also represents a form of resistance or opposition to the prevailing typically white, middle-class American mainstream culture. On the contrary, some others prefer to identify them as Latino or Asian with the aim of keeping them outsider from the age old *'White-Black Racial Bigotry'*.[1,4-6,16-19] Despite the persistence of ethnic and national identities, pan ethnic identification in the United States is increasing very significantly. In a study, it was noted that nearly 40% of Mexican Americans, Puerto Ricans, Cuban Americans and others identified with pan ethnic labels.[20] By 2008, the percentage had doubled to over 80%. Asian American identity has also increased such that in 2001 60% accepted the pan ethnic term as part of their identification[21]. However, Cuban Americans had been found to be less willing to identify them as *Latino or Hispanic Pan-ethnic Rubric* than Mexican Americans and Puerto Ricans.[22] Factors like 'Class' and 'Education differences' and 'Experiences of Discrimination' have been found to be marked pan-ethnic identification trends within the Asian American community.[20-23] Among Asian Americans, Koreans are most likely to identify with a pan-ethnic label and Japanese are the least likely [23].Increasing ethnic and racial diversity in the society opens up many avenues to realign or redraw ethnic boundaries, redesign new ethnic categorizations through the dynamic interplay of ethnic integration and host society reception. As the ethnic and generational mix of a society becomes broader or complex, there is a requirement to define boundaries of larger ethnic clusters. The construct pan-ethnicity

has entered into the sociological literature recently, but the message or connotation of this term is not new in this discipline. The key of Pan-ethnicity is the recognition of ethnic and cultural diversity within the limit of practice or functions. For the pan-ethnic group, boundaries tend to expand beyond national origins to encompass a range of groups perceived to share some structural or cultural traits[2,4, 11-14].

Nationalism, Minoritism and Pan-Ethnicity

Pan ethnicity is characterized by a unique tension inherent in maintaining subgroup distinctions while generating a broader sense of solidarity. This tension distinguishes pan-ethnicity as a form of ethnic expression because it places questions of subgroup diversity and cultural legitimacy at the forefront.[19] The construct nationalism is evolved around the idea of nation. According to Lewis [24], the term nation connotes a culture-unit. Gellner[25,26] defined nationalism, as *"nationalism is primarily a political principle, which holds that the political and the national unit should be congruent." Nationalism is a sentiment. "Nationalist sentiment is the feeling of anger aroused by the violation of the principle, or the feeling of satisfaction aroused by its fulfilment"*. Precisely, nationalism is understood as the doctrine of political legitimacy, which states that ethnic boundaries should not divide the political boundary of the state[25,26]. Alternatively, nationalism can be referred as the link between ethnicity and the state. As per this view nationalism is the ethnic ideology, which hold that their group should dominate a state. A nation-state, therefore, is a state dominated by an ethnic group, whose markers of identity (such as language or religion) are frequently embedded in its official symbolism and legislation. There is a drive towards the integration and assimilation of citizens in nation-state, although Gellner concludes that nations may contain 'non-meltable' people, what he calls *entropy-resistant groups*.[25,26] According to Cohen,[27] politically driven nationalism uses symbols, which have the power of creating loyalty and a feeling of belonging. Nationalist ideology was first developed in Europe and in European diaspora during the French Revolution. Here two things must be noted, i.e. *tradition* and *traditionalism*. Nationalism, which is a traditionalistic ideology, may glorify and re-codify an ostensibly ancient tradition shared by the ancestors of the members of the nation, but it does not thereby re-create that tradition. Modernisation and popularization of the nation-state concept have developed a new condition for the people known as 'ethnic minorities' or 'indigenous people'. Most of them have become the legal citizens in states, whether they like it or not. Spreading of the idea of capitalism has also had important role in creating new forms of ethnicity. Capitalistic society did it by local economic and cultural change and evoking migration. An ethnic minority is described as a group, which is numerically smaller than the rest of the population in a society. These groups are politically non-dominant. The twin concepts minority and majority are characteristically *relative* and *relational*. A minority exists only in relation to a majority and vice versa, and their relationship is said to be contingent in nature. In the context of modern geo-political situation, system boundaries are usually understood as the political boundaries of the states. The majority–minority relationship therefore changes if state boundaries are realigned. Minorities may accept the domination of the state in three principal forms, e.g. 'exit', 'voice' and 'loyalty'[22,28]. The first form of compliance to state is to assimilate. This is the commonest process of developing relationship with the state from the side of ethnic minorities. However, in some cases those communities cannot choose assimilation. The minorities that are against assimilation frequently have a subordinate place in the division of labour. They could be the victims of ethnic segregation. Other groups, however, actively resist assimilation and react through ethnic incorporation. The second option for minorities is showing subordination, or in other ways trying to coexist peacefully with the nation-state. In that case, they may sometimes negotiate for limited autonomy in areas like religious, linguistic or local political matters. In other cases, those groups may create their own ethnic boundaries and identities informally in relatively smaller manner. The third principal option for minorities is exit or secession from the state if they found the state policies are grossly incompatible to them. In reality, both the state and ethnic minority groups usually combine strategies of assimilation and segregation (or ethnic incorporation), and minorities maybe divided over issues of independence. A term commonly used to describe compromises between assimilation and segregation/incorporation is

'integration'. This implies the minority's concurrent participation in the shared institutions of society and the group identity and ethnic boundaries.[27-30]

Race, Ethnicity, Pan-Ethnicity and Mental Health

Race and ethnicity both these two elements have strong correlation with the mental health of people. Factors like racism and ethnic discrimination have been identified as potential stressors contributing to mental health problems of racially and ethnically minority groups. Some authors in past showed that racial minorities in United States have relatively poorer mental and physical health than their White counterparts.[28-30] Also racial discrimination was associated with a greater likelihood of depressive or anxiety disorder to individuals belonging to ethnic minorities. Gee et al[30] observed that phenomenon to those people even after controlling factors like acculturative stress, family cohesion, self-rated health, and poverty. Racism contributes to differential health outcomes beyond other forms of general distress and socioeconomic status.[30,31] Incidents of racial and ethnic ill treatment and discrimination are not only detrimental to adults, but it can cause very severe negative consequences to children and adolescents. Racial and ethnic discrimination and prejudices can cause developmental and psychological processes like 'identity formation', 'peer relationship skills', 'self-esteem and efficacy', 'ability to rely others', and 'physical and mental well-being'.[30-32] Many past empirical studies had shown that greater perceived discrimination of ethnic minorities were associated with lower self-esteem, detrimental self-image, having social anxiety, feeling of low self-worth and beliefs, increased feeling of anticipating humiliation and public harassment.[33] Racism can also have indirect effects on health through its influence on emotional well-being and psychological distress. Psychoactive substance use has also been found to be associated with racial and ethnic discrimination and ill-treatment to individuals belonging to ethnic minorities in large multicultural societies.[30,33,34]

Conclusion

Pan-ethnicity has emerged as a powerful doctrine for the cosmopolitan and multiracial societies. This construct is important from the theoretical angles of the disciplines like sociology, social anthropology and social psychology, because it gives importance to ethnic change, and structural and cultural factors of the society. The construct pan-ethnicity has got importance to understand how immigrants experience the process of incorporation into a newer host society. Groups sharing a pan-ethnic boundary live closer to one another points to the potential for subjective ethnic identities to shift to this higher-order level through increasing contact, interaction and observation. Pan-ethnicity has become a significant form of identification in modern world. It is understood by a unique tension embedded in maintaining subgroup distinctions while generating a broader sense of solidarity. This tension establishes pan-ethnicity as a form of ethnic expression because it puts up questions over subgroup diversity and cultural legitimacy at the forefront. As such, the study of pan-ethnicity encourages researchers to study and explore areas like intragroup dynamics and process of negotiations used informally to deal with conflicts between subgroups. The construct pan-ethnicity entails social, cultural and emotional components.

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Drug Review

Pimavanserin

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Introduction

Pimavanserin, a 5HT2A receptor inverse agonist, is the first FDA approved drug for the treatment of delusions and hallucinations associated with Parkinson's disease psychosis (PDP), a notorious condition in Parkinson's disease (PD).It is seen to reduce psychosis in PD through its unique mechanism of action, having the unique advantage of not exacerbating the parkinsonian motor symptoms.

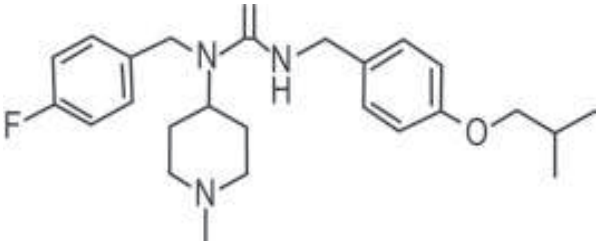

Figure1: Chemical structure of pimavanserin[1-(4-Fluorobenzyl)-3-(4-isobutoxybenzyl)-1-(1-methylpiperidin-4-yl) urea]

Mechanism of action

Pimavanserin is a nondopaminergic selective serotonin predominantly 5HT2A receptors inverse agonist, which not only blocks the action of agonist at the receptor, but also decreases the intrinsic activity of the receptors.[1]At therapeutic dose, pimavanserin may also bind to 5HT2C receptors besides saturating 5HT2A receptors,contributing to the therapeutic efficacy.[1,2] As it does not bind to dopamine D2, histaminic, adrenergic or muscarinic receptors , it is not likely to worsen motor symptoms, cause sedation or hypotension which is potentially associated with other antipsychotics.[3]

Pharmacokinetics

Pimavanserin is primarily metabolized by the liver through the cytochrome P450 system, CYP3A4 and CYP3A5, with an active (n-desmethylated) metabolite AC-279.[4] It is then excreted primarily through urine, with <1% unchanged. Pimavanserin is approximately 95% protein bound and has a large volume of distribution. Pimavanserin has a mean elimination half-life of 55-60 hours with median time to Cmax (tmax) approximately 6 hours, the time being independent of dose.[5] Pimavanserin's active metabolite has a half-life of nearly 200 hours. Given its long half-life and large volume of distribution, pimavanserin may penetrate the central nervous system and is effective in once daily dosing, the maximum tolerated dose being 100 mg daily.[4] The bioavailability of pimavanserin is not seen to be affected by food rich in fat. [6]Pimavanserin is well tolerated and no serious side effects are reported in early phase studies.

Clinical Studies with Pimavanserin in PDP

There are few published studies assessing the efficacy of pimavanserin.The first randomized double blind placebo controlled trial involving 60 subjects taking 20-60 mg pimavanserin showed reduction in hallucinations and delusions as compared to placebo with good tolerability over 28 days.[7]

In another double blind, phase III placebo controlled study,[8] 199 subjects with PDP from 52 sites were given 40 mg pimavanserin once daily or placebo. The primary outcome measure was Scale for Assessment of Positive Symptoms in Parkinson's disease (SAPS-PD), showing a reduction by 5.79

points (37% change from baseline) after 6 weeks treatment with pimavanserin (n = 95) compared with a reduction of 2.73 points (14% change from baseline) in the placebo group (n = 90); (p = 0.0014). The benefit of pimavanserin on PDP symptoms was evident irrespective of subject's age, gender or Mini Mental Status Examination score.[8]

A meta-analysis of the four randomized clinical trials assessed 680 patients with PDP with mean age of 71 years, demonstrated significant improvement in SAPS total hallucinations and delusions scores with pimavanserin compared to placebo.[1,9] Also, incidence of orthostatic hypotension was less in the pimavanserin group. Overall,the meta-analysis suggested that pimavanserin is an efficacious and safe treatment for PDP.

A phase III, multicenter, randomized, double-blind, placebo-controlled trial with 298 patients using change in SAPS-H+D (SAPS hallucinations + delusions) - score from baseline to day 42 as the primary efficacy measure, did not show statistically significant benefit with pimavanserin.[4]

There are no head-to-head trials of pimavanserin versus clozapine or quetiapine, two drugs that have been previously used for management of PDP, to determine comparative efficacy. Although both drugs show considerable affinity for 5-HT2 recipter relative to D2 receptors, but both drugs can cause sedation and orthostatic hypotension, side effects seen to a lesser extent with pimavanserin.

Dosage and Drug interactions

Pimavanserin is approved as a single dose, 34 mg daily, administered as two 17 mg tablets taken once daily, without titration.

As it is predominantly metabolised in the liver so a dosage reduction to 17 mg daily is recommended when strong CYP3A4 inhibitors (e.g., clarithromycin, indinavir, or ketoconazole), are concurrently given.Also, an increased dosage may be needed when given with a CYP3A4 inducer (e.g., carbamazepine, phenytoin, rifampicin, or St. John's wort).

No dosage adjustment is needed in patients with mild to moderate (CrCL $\geq$ 30 mL/min, Cockcroft-Gault) renal impairment.

It is not recommended in severe renal impairment patients and in patients with hepatic impairment as it has not been studied in these population. It should be avoided in patients with known QT prolongation or in combination with other drugs known to prolong QT interval,those with history of cardiac arrhythmias and other conditions that may increase the risk of occurrence of torsade de pointes.

Side effects

Side effects at 40 mg of pimavanserin include urinary tract infection (13%), falls (11%), hallucinations (7%), nausea (6%) peripheral edema (6%), confusion (6%) and headache (1%). The incidence of headache was found to be less than that with placebo.[8]

Black box warning

There is a black box warning of increased risk of death with pimavanserin in elderly patients.There is no direct evidence of increased mortality with pimavanserin, the warning being extrapolated from the use of dopamine-blocking antipsychotic agents in older people with dementia.

Other possible indications

Pimavanserin use as monotherapy for Alzheimer's disease psychosis as well as for agitation and aggression associated with it, is now being studied. It is also being investigated for use either as monotherapy or in combination with either haloperidol or risperidone in schizophrenia.[4]

Conclusion

Pimavanserin is a new antipsychotic, recently approved by the FDA for treatment of PDP. Few clinical studies demonstrate the effectivity of pimavanserin in PDP without worsening of motor symptoms.However, more clinical studies are needed in various patient populations in order to widen the scope of use of this novel antipsychotic, thus providing more relief in the difficult and tricky condition of Parkinson's disease Psychosis.

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Forensic Psychiatry

Marital Rape: Legal Provisions and Controversies in India

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Marriage in India

Marriage is a sacred institution formed with love, mutual respect and trust between a man and a woman. It gives permission to a male and a female to live together under customary and statutory law. It is a special bond shared between two souls, who tie the wedding knot after promising to be companions for a lifetime. Marriage, in Indian perspective, use to hold a traditional view that husband is the bread owner and wife is expected to be submissive, docile and a homemaker. Lord Keith, speaking for the British Court in 1991, declared, 'marriage in modern times regarded as a partnership of equals and no longer one in which the wife must be the subservient chattel of the husband'.[1] In the present scenario in India, husband and wife both have separate legal entity. Women in India are giving their assistance in home as well as outside.

Rape

The word 'rape' has been derived from the term '*rapio*', meaning 'to seize or snatch'. Rape is an assault by a person involving sexual intercourse without that person's consent. Rape has been reported for centuries and has been described aptly in Roman and Greek mythology. The universal book Bible also lay down the laws for rape. Charlemagne was the first to introduce medical evidence in case of rape. Rape has been defined variably in many countries and hence no universal definition available. Though it can be safely considered that rape can be committed by either member of sex on a person of either sex but in India only male female rape is legally possible.[2] Though being happening for centuries, rape and its consequences created gigantic ripples not only in the Indian community but globally after the shameful and abominable crime that was committed against a physiotherapy intern renowned as "Nirbhaya Case" in 2012 in Delhi. This led to major legal changes in Criminal Law (Amendment) Act 2013 on the basis of recommendations provided by Justice Verma committee. Rape was redefined to include any acts in addition to vaginal penetration with acts like penetration of penis, or any object or any part of body to any extent, into the vagina, mouth, urethra or anus of another person or making another person do so, apply of mouth or touching private parts as offence of sexual assault. It also included "penetration to any extent", and the lack of physical resistance as immaterial for constituting an offence.[3] This committee had also recommended to remove Exception 2 of Indian Penal Code (IPC) 375 which states that sexual intercourse by a man with his own wife (even without her consent) is not rape if she is more than 15 years of age.[4] If less than 15 years then even with consent it was constituted as rape.

Marital Rape

Definition

Marital rape is defined as unwanted non consensual intercourse by a man with his wife obtained by force or threat of force or when she is unable to give consent.[5] The Supreme Court of India has aptly described rape as 'deathless shame and

the gravest crime against human dignity'.[6] Rape is not only a physical attack on a person but it also violates the integrity and infringes on other persons right as well as affect one's mental peace. And when it happens within boundaries of marriage it breaches the trust between husband and wife. Ironic it is, that a women has all the right to demand for protection and justice when her dignity is shattered by a total stranger but when it is done by her own husband, it is merely his demanding his conjugal rights. The sacrosanctity of marriage gives immunity to a husband but not to a stranger. How different marital rape is from a rape by an unknown when in both the situations, it is a breach of her virtue without her consent denying a women the most basic human rights. In current scenarios where right to equality is brought forward, the civilized society does not and should not accept role of wife to be a submissive, compliant person who is at whims and fancies of their husbands. It should be considered as rape and brought under strictest laws.

Prevalence

Marital rape is underreported probably due to a variety of reasons like guilt, financial dependency, shame, lack of awareness etc. Best available statistics from United States report that one out of every seven or eight married women are subjected to rape or attempted rape by her husband.[7] In a study by International Institute for Population Sciences and Macro International as many as 35% of Indian married women of age 15 to 49 years have been physically threatened and ten percent experienced sexual violence perpetrated by their current or former husband over the course of marriage. In the same study it was found that only 0.9% of sexual violence was committed by a stranger and rest by an acquaintance like husband, father, friend, employer, teacher etc. Among them husband topped the list (87.5%) as the perpetrator.[8]

World Health Organization reports of approximately 35 per cent of women worldwide having experienced either physical and/or sexual intimate partner violence or sexual violence by a non-partner at some point in their lives. However, some national studies show that up to 70 per cent of women have experienced physical and/or sexual violence from an intimate partner in their lifetime.[9]

A study carried out jointly by International Centre for Women and UNPFA at 8 major Indian states concluded that a vast majority of sexual violence was reported by women within marriage in comparison to 2.3 percent by strangers. Also, that a third of men accepted having forced a sexual act upon their wives/ partners at some point in their lives.[10]

Another report from Sneha (NGO in Dharavi), 159 women out of 664 reported marital rape while their counselling centres at Mumbai reported 64 case of marital rape of 218 cases of registered domestic violence.[11]

Today, there are many countries even the developing ones that have either added marital rape laws, removed marital rape exceptions or have laws that do not distinguish between marital rape and ordinary rape. Most recently, it is done so by Rwanda, South Korea and Jamaica in 2009. The criminalization of marital rape in these countries both in Asia and around the world indicates that marital rape is now recognized as a violation of human rights globally. But to our dismay, marital rape is an offence punishable under the criminal law in at least 100 countries and India is not one of them.[12]

India and its laws on Marital Rape

The legendary Phulmoni Dasi case in 1889 of child marriage followed by marital rape leading to death of the victim paved the way for introduction of concept of marital rape. Section 375 of Indian Penal Code, 1860 mentions ''Sexual intercourse by man with his own wife, the wife not being under 15 years of age is not rape.'' It was initially approved for those less than 10 years of age of wife in India.[13] Age of wife in Exception was increased to 12 years in 1891 after the amendment of IPC from the initial provision of ten years of age. Child Marriage Act in 1929 lead to another year rise to 13 years and finally to the current status of 15 years in 1940 after the amendment in Penal Code.[14]

The punishment described in Section 376 IPC is as under:

(a) When the wife is between 12-15 years of age, offence punishable with imprisonment upto 2 years or fine, or both.
(b) When the wife is below 12 years of age, offence punishable with imprisonment of either description for a term which shall not be less than 7 years but which may extend

to life or for a term extending up to 10 years and shall also be liable to fine.

(c) Rape of a judicially separated wife, offence punishable with imprisonment upto 2 years and fine.

(d) Rape of wife of above 15 years in age is not punishable.

This was small relief for those less than 15 years but when it came to those above 15 years, there were no legal aid that can be looked upon.

Legal conflicts

Exception 2 of section 375 is not only considered to be arbitrary but also makes unnecessary , illogical distinction between girl child who is less than 15 years and that who is more than 15 years. This is in direct violation of the beneficial intent of article 15(3), article 21of our constitution[15] and our International convention commitments which is directed towards providing better provisions for women and children.

The **Child Marriage Restraint Act 1929**, prohibits the marriage of girl below 18 years of age. This Exception in Section 375 where nonconsensual intercourse with married girl more than 15 years was not taken as rape, the word to be focused here is marriage. How biased it is, that on one side the Act prohibits marriage under 18 on the other allows nonconsensual intercourse as not rape, if she is married and between ages of 15 to 18 years.

Similarly **Prohibition of Child Marriage Act, 2006 (PCMA**) [16] a male less than 21 years of age and female less than 18 years is a child and 'child marriage' means a marriage where either contracting party is a child. Section 3 of the PCMA says that a child marriage is not void, but only voidable. Interestingly, Parliament has made a child marriage an offence and has provided punishments for the same. Any male adult above 18 years of age marrying a child shall be punishable with rigorous imprisonment which may extend to two years or with fine which may extend to one lakh rupees or with both. Therefore regardless of his age, a male is penalized under this section if he marries a girl child. So, a child marriage is a criminal offence with rigorous punishment and is still void and sexual intercourse within a child marriage is not rape under the IPC 375.

The Juvenile Justice (Care and Protection of Children) Act, 2015 (the JJ Act) [17] defines that a child (<18 years) is in need of care and protection as a child "who is at imminent risk of marriage before attaining the age of marriage and whose parents, family members, guardian and any other persons are likely to be responsible for solemnization of such marriage". So a child who is married of does not need care and protection from the forceful consummation.

Also, how odd it is that a husband cannot be charged for rape if his wife is between 15 to 18 years of age but can be charged under **Section 354 IPC** if he tries to outrage her modesty.

Also contrary to the theories of the rights relating to life, liberty, equality and dignity of the individual guaranteed in **The Protection of Human Rights Act, 1993** sexual intercourse without consent oversteps these boundaries. This can be seen as disrespect towards the Convention on the Rights of the Child (the CRC) and the Convention on the Elimination of All Forms of Discrimination against Women (the CEDAW) of which India is also a part of.[18]

The Protection of Women from Domestic Violence Act, 2005[19] provides that if the husband harms or injures or endangers the health, safety, life, limb or well being, whether mental or physical, of his wife including by causing physical abuse and sexual abuse, he would be liable to have a protection order issued against him and pay compensation to his wife.

Protection of Children from Sexual Offences Act, 2012 (POCSO Act)[20] is as per the name sake. In this Act a child is defined as any person who is less than 18 years of age and that sexual exploitation and sexual abuse of children are heinous crimes and are given rigorous punishments for the same.

But this is totally opposite to what is said in Exception 2 to Section 375 of the IPC. It is a perfectly legitimate activity if the sexual exploitation or sexual abuse of the girl child is by her husband.

All these conflicting and interrelating legalities may throw light on the urgent need to evolve laws for marital rape.

Revisions

With Nirbhaya case, Justice Verma committee looked into and recommended changes in legal provisions which included suggestions for deletion

of the Exception 2 but was ignored. Well hurrays' to small victories , that with recent historic judgment of Supreme Court in October 2017 where the age in Exception 2 was raised to 18 years aligning it with other statues and provisions for a child. This will atleast play some role in aversion towards child marriages and will also probably reduce the drastic effect on physical and mental stability of a girl child. It will also assist the economy of country by reducing its burden with caring for early teen pregnancies and infant care .The highest court also stated that it is "quite clear that a rapist remains a rapist and marriage with the victim does not convert him into a non-rapist." It goes on to say, "A rape that actually occurs cannot legislatively be simply wished away or legislatively denied as non-existent."[21]

All this is well and good but what about those above 18 years? Marital rape at any age specially in younger age has not been advocated for a variety of reasons, including women's physical and mental well-being and her social standing – all of which should ordinarily be of paramount importance to everybody, particularly the State. Whatever limited research available which focused on marital rape survivors reported its consequences to be severe and long lasting. Psychological effect evidence were no different than any other rape survivor and probably were more severe due to the trust factor. Most common consequences included anxiety, Depression, lack of sleep , eating disorders, fear of men, substance abuse, suicidal ideation and post traumatic stress disorder.[22]

Under reporting can also be attributed to not only the deficit in our laws but to the traditional views of female or to the financial dependency or even due to social stigmatization. In the National Family Health Survey 3 it was found that about 54.4% of Indian women believe violence was justified, for instance when a meal hasn't been prepared in time, if she goes out without telling the husband or when sex has been refused.[8]

India has majority of its laws adopted from England where marital rape is a crime. So probably, India can look upon their original law definers. Sadly, when enquired on that issue, the chosen people representatives comment that 'The concept of marital rape as understood internationally cannot be suitably applied in the Indian context due to various factors like level of education, poverty, myriad social customs and values, religious beliefs and the mindset of the society to treat marriage as a sacrament.' Or that it can be a cause of harassment to the husbands while safely ignoring the violation of wife. Centre prefers to fall back on tradition when it comes to these things as they do not want to intrude on personal laws but just because some custom or tradition is happening for decades doesn't make it right or acceptable.

This is an era of empowering women and if issue like marital rape is covered up under the coats of marriage and the voices of women is smothered, future of our country seems bleak.As Finkelhor and Yllo said (cited by Mahoney et al) a woman who is raped by a stranger lives with a memory of a horrible attack but a woman who is raped by her husband lives with a rapist.[23]

Conclusion

Marital rape is highly controversial, legal above 15 years in current scenario. It contrasts with other legal provisions making it all the more confusing. Lack of reporting due to shame or absent legal provisions makes it even less acknowledged. Over the years, marital rape failed to gain recognition in the eyes of policy makers. Laws are dynamic and need regular revisions and turning a blind eye towards such an abhorrent act like marital rape is a crime in itself. There is a definite need for legal reforms to protect the women of our country making it a safe haven without discrimination.

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Case Report

Folie a deux - A case of shared psychotic disorder

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Introduction

Shared Psychotic Disorder or " insanity of two," was first described in 1860 by Jules Baillarger who named the disorder folie acommuniquee," yet, the first description is usually attributed to Lasegue and Falret (1877).[1,2] The disorder may be shared by more than two people and thus the terms folie a trois, folie a quatre[3] folie a cinq, etc.

In most instances, psychotic symptoms develop in a patient during a close long term relationship with another person who had a preexisting psychotic disorder, with the former being considered the secondary case (Inductee or Recipient), and the latter being considered the primary case (Inducer).[3]

SPD is said to be rare.[3,4] The delusions are first manifested in the dominant personality, who in turn influences the weaker personalities and suggestible and less intelligent people. It is identified more frequently in women,[5,6] reflecting the traditional submissive role of females in the family.

ICD-10 adopts the term 'Induced delusional disorder',[7] whereas DSM-5 used the term shared psychotic disorder which is listed under Other specified Schizophrenia Spectrum and Other Psychotic Disorder.[8]

Case Report

Two sisters presented here as A and B were brought to Psychiatry OPD by mother in August 2016 complaining about their odd behavior. One was 19 years old and other was 21 years living with their family.

According to mother, Miss A was well until March 2016 when she stopped listening to her mother, become aggressive and abusive, started to run out of home, most of the time smiles and cry without any apparent reason, self mutter and stopped taking care of herself, her sleep was also disturbed. Upon assessment of her mental status examination silly smiles was present, eye contact was ill sustained and auditory hallucinations and delusion of persecution were present.

Miss B, sister of A developed the same symptoms like self muttering, silly smiles, looking on the wall and moving her lips as if talking to someone, also sometimes become aggressive and abusive and try to run out of home. This started 10 days after the illness of her sister. On mental status examination she was cooperative, eye contact was ill sustained, affect was shallow and inappropriate, auditory hallucination and ideas of persecution was present.

Neither our patients nor their family member had any psychiatric or medical illness in the past. They both were investigated routinely and was put on Risperidone 4mg. Psycho-education was given to the mother about the nature and course of illness. They came for follow up after 15 days when there was significant improvement but they lost to follow up after that. They again were brought to OPD in February 2017 when they developed the same symptoms.

Discussion

Our case met the current operational criteria for shared psychotic disorder as described in DSM-5 and ICD10. Miss A and Miss B were closely related and were staying together in the same house. Both A and B had no prior psychiatric illness. Content of delusion were identical in both sisters.

Temporal evidence showed that delusion was transferred from A to B.

Our case report is similar to other cases of shared psychotic disorder, because this syndrome often occurs among family member of the same family[9] and most commonly between sisters.[10]

In studies it was noted that 72 percent of primary case and 54% of secondary cases were female.[10] In share disorder the most common transferred symptom are delusion and the most common delusions are persecutory[11] which were present in this case report.

Multiple factors such as environmental (closed emotional relationship) and genetic vulnerability factor could be important to create shared psychotic disorder.[12] Manifestation of symptom in these sisters within 1 month interval can be explained not only because of closed relationship but also due to genetic overlap. On the other hand vulnerable genetic overlap is seen in schizophrenia.[13]

None of our cases had any past or family history of psychiatric illness. Most of the earlier reports had found past history of Schizophrenia, Psychosis or Personality disorder in the inducer/primary case.[14] Our case had significant improvement in 2 weeks of treatment. Delusional belief was absent and level of impairment was also minimum but they did not comply with treatment and lost to follow up.

Conclusion

Our case report emphasizes the following points.Shared delusional disorder is not uncommon. If not properly diagnosed, the patients may undergo unnecessary investigations and procedures. The role of family in sustaining delusional belief should be addressed. The phenomenon of shared delusional disorder can occur in absence of past history of psychiatric illness and subnormal intelligence. Both genetic and environmental factors are important in the causation of such disorders. The shared delusional disorder can affect any age group

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Case Report

Topiramate Induced Dysphagia : a case report

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Introduction

Dysphagia is a condition that may present due to decreased range of motion, strength, and/or coordination of the muscles used for deglutition, resulting in delayed triggering of the swallow, reduced swallow efficiency, or reduced aspiration/ penetration.[1] Gastrointestinal discomfort is among the most common side effects of antiepileptic drugs (AEDs) that might lead to discontinuation or irregular consumption of the drugs.[2] In studies looking at gastrointestinal side effects of AEDs, dysphagia has been reported in 10-22% cases and the risk of dysphagia increases when combination of AEDs are used.[3] This may be accompanied by acidity and heartburn. Usually the symptoms reduce or abate when the dosage is adjusted or reduced or upon stoppage of the drug.[4] It is sometimes difficult to ascertain which drug is at fault when multiple drugs are at play and stoppage of drugs one by one is the only way out.[5] Though drugs like phenytoin, carbamezapine and valproate have been implicated in AED induced dysphagia, the newer AEDs have shown a low incidence of this side effect.[6] We report herewith a case of substance induced psychosis that developed dysphagia on starting Topiramate for drug induced weight gain and the symptom disappeared on stoppage of the drug.

Case Report

A 20 year old Hindi speaking right handed Muslim male, resident of Mumbai and labourer by occupation, hailing from Kerala had become aggressive and unmanageable there hence was sent back to Mumbai along with one of the work mate. On enquiry the patient had physically abused few of the work mates and had altercation with the boss several times in the past few months. As per his mother, the patient had odd behaviour when he returned home in the form of not interacting with family members, getting angry and abusive on trivial issues. He would spend most of his time outside the home along with friends and would return late at night. He would not sleep throughout the night and do nothing but sit at one place. On enquiry, the patient stated that he was afraid of being harmed by someone and used to remain fearful mentioning that someone might come and kill him. He would frequently tell his family members that someone has done black magic on him. The symptoms were insidious in onset gradually progressing and had continuous course. Patient was brought to the psychiatry outpatient department for the same and was admitted in view of his aggression. On further enquiry patient mentioned that he has been smoking cannabis in a chillum since 4-5 years. Starting with 1-2 chillums per day he gradually increased the quantity to 4-5 chillums per day along with occasional alcohol consumption in form of 1-2 bottles of beer once in 15 days. There was no apparent stressor and he had started it for fun along with friends and claimed to have had increase in appetite and continued smoking cannabis as he wished to gain weight and have muscular body.

In view of his aggressive behaviour he was admitted in psychiatry ward and all routine investigations were done which included complete blood count, liver and renal function tests, serum electrolytes, fasting blood sugars, X-ray chest PA view and electrocardiogram. All the tests were within normal limits. A diagnosis of cannabis induced

psychosis was made. The patient was started on oral Olanzapine 10mg gradually up titrated to a dose of 20mg in divided doses over a period of one week, Baclofen as an anticraving agent in a dose of 30mg once a day up titrated to 60 mg per day in two divided doses. On minimal improvement within a week patient was started on Haloperidol 10 mg per day along with Trihexiphenidyl 4 mg per day in divided doses. After 2 weeks of treatment, the patient showed minimal improvement in symptoms and attempted running away from ward several times. Patient was started on a course of electroconvulsive therapy (ECT) and showed significant improvement in aggression and ideas of persecution after 6 ECT sessions. After 2 months of hospital stay, patient was discharged with 80% percent improvement in symptoms and was advised to continue follow ups on outpatient basis. On further follow up the patient remained compliant to medications and was behaviourally maintained but started with complaints of increased appetite and weight gain and minimal improvement in craving for cannabis. Considering the symptoms patient was started on Topiramate 50 mg per day in two divided doses and Baclofen was stopped. Considering minimal improvement in increased appetite and craving after a week, Topiramate was titrated to a dose of 100mg in two divided doses. On the third day of increasing the dose patient was brought to the emergency department with complaints of inability to take in food and difficulty in swallowing which was abrupt in onset and after 24 hrs of taking 100 mg Topiramate. At the time of presentation, the patient was unable to swallow solid food and took time in swallowing liquid when examined. The patient had drooling of saliva with no signs of any extrapyramidal reaction and intact speech was present. An otorhinolaryngology reference was made to rule out other causes of dysphagia which revealed no throat or esophageal abnormality. The patient wished to continue treatment on an outpatient basis. Topiramate was reduced to 50 mg in two divided doses and the patient gradually improved in a duration of 48 hours. After complete stoppage of the drug he was totally alright with no dysphagia. Currently the patient is maintained behaviourally and abstinent from cannabis on Olanzapine 20 mg/day, Haloperidol 10mg/day and Trihexyphenydyl 4 mg/day.

Discussion

A dedicated literature search by the authors has revealed no case report of Topiramate induced dysphagia available. The adverse reaction seen in our case was evaluated using Naranjo's algorithm[7] for drug induced adverse effects and a score of +5 which indicated a probable drug induced phenomenon. We requested the patient for a re-challenge again with a high dose of Topiramate on follow up but due to the distressing nature of the side effect, both the patients and relatives refused. Gastrointestinal adverse effects are common in patients suffering from epilepsy and treated with different AEDs. Patients treated with Gabapentin and Carbamezapine tended to have the highest rate of such problems. These were followed by Valproate and Phenobarbitone.[8-9] Dysphagia is a frequent symptom in patients with many neurological disorders including brain trauma that may be seen in substance abuse patients.[10] Neurogenic dysphagia may be undiagnosed and AEDs may cause or exacerbate it.[11] However, in our patient, the dysphagia was due to Topiramate and not caused by a central nervous system lesion as withdrawal of the drug resolved the impairment in swallowing. Topiramate is a drug that is used to counter antipsychotic induced weight gain in psychiatric patients[12] and it is important that clinicians be aware that at times it may induce dysphagia as a side effect. This also becomes important if the dysphagia compounds an extrapyramidal reaction like a dystonia caused by antipsychotics. Though rare, the side effect must be enquired for and kept in mind.

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Case Report

Clozapine Induced Transient Neutrophilia in a Patient with Schizophrenia

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Introduction

Clozapine is a second generation antipsychotic that is reserved for treatment of resistant cases of psychosis. It is however associated with metabolic, cardiologic, gastrointestinal and rarer blood dycrasias along with multitude of other side effects. Blood dycrasias are rare but fatal. This has led to periodical monitoring of blood counts while clozapine therapy is initiated. Among the blood dycrasias, neutropenia and agranulocytosis have been frequently seen in clinical practice. But paradoxically there have been reports of intermittent and chronic leukocytosis associated with clozapine.[1,2] Here we report a case of transient neutrophilia following initiation of clozapine in an afebrile inpatient with chronic schizophrenia.

Case History

Patient is a 38 years, unmarried male, graduate and from a lower socio-economic, rural background and 3rd among the four siblings. He was diagnosed as a case of schizophrenia with onset at 20 years of age. He had no history of head injury, seizure disorder, hypertension, metabolic problem in past. However, he was taking oral tobacco on a daily basis for 5-6 times in a day for more than 12 years now. There was family history of psychosis in his mother and sister. He received psychotropic medications for the first time, 6 months after the onset of illness. After some improvement medications were stopped by family members. Following this, there was relapse of illness and he was admitted multiple times in hospital. He was tried with Trifluoperazine, Risperidone and Haloperidol tablets at adequate dose and duration for last 6 years along with monthly Haloperidol Decanoate injection. As he was still symptomatic, patient was admitted and Clozapine therapy was initiated as per clinical guidelines and weekly monitoring of total leukocyte count and absolute neutrophil count was done.

The weekly values of counts are shown in Table 1 and graphical representation of the same in Figure 1. Rise of both leukocyte as well as neutrophil count from 5th week onwards was observed that started at dose of 225mg/day of clozapine. The rise in blood counts lasted till 14th week. On general physical examination during 5-6th week, the patient was afebrile. He had tachycardia and mild salivation with blood pressure of 100/70 mm of Hg. No other significant physical finding was seen. Complete hemogram of the patient revealed a normochromic normocytic blood picture with leukocytosis along with neutrophilia. No increase in other white blood cell line apart from neutrophil was seen. No immature blood cells were seen and platelet count was adequate. Chest X-ray did not reveal any abnormality. Following rise of blood counts the dose of clozapine was reduced and blood counts came to normal levels by 14th week. After this, clozapine was increased again and a dose of 300 mg/day was reached by 18th week (without any change of blood picture). Patient was then discharged.

Discussion

Leukocytosis has been seen in cases with infection, inflammation, metabolic and myeloproliferative disorders along with emotional problems like stress & anxiety and with use of drugs like beta agonist, corticosteroids, lithium, etc.[3] Leukopenia and agranulocytosis with clozapine have been widely

reported. In our case, we have observed paradoxical leukocytosis with neutrophila that occurred transiently and self remitted over a course of 9 weeks as shown in Figure 1. The phenomenon is independent of dose as no further rise of blood counts was seen following increase in dose during same treatment phase as shown in Table 1. There have been reports of chronic leukocytosis with clozapine use.[1] Such rise was associated with concurrent use of lithium, high smoking, hypertension and metabolic disorders.[1] There is also a case report of intermittent leukocytosis with neutrophilia that was associated in patient with splenectomy.[2]

Table-1: Weekly dose of Clozapine compared with Blood counts (Total count, TC/ Absolute Neutrophil Count, ANC)

Week	Dose of clozapine (in mg/day)	TC (in cells/mm^3)	ANC (in cells/mm^3)
0 (Baseline)	—	9800	7350
1	75	8500	5950
2	150	10000	6000
3	150	10300	7519
4	200	9200	6900
5	225	18000	14220
6	300	17000	12240
7	300	16200	11826
8	300	15400	11242
9	225	12300	8118
10	200	15300	12087
11	100	13200	9635
12	150	15000	12000
13	150	15200	12000
14	200	10500	7455
18	300	8100	5427

Leukocytes exist in two forms once it comes out of bone marrow. The first form remain adherent to the blood vessel walls and the second form is free flowing. Following infection, inflammation, drugs, stress and anxiety these leukocytes demarginate from vessel wall and may cause a slight increase in leukocyte count.[3] Also in cases with splenectomy, it was seen that clozapine use was associated with chronic leukocytosis. The spleen acts as leukocyte buffer where they are stored and sequestered. In our case no such factors were involved.

There is no well accepted mechanism to explain blood dycrasias with clozapine use. Immunological mechanism most often cited for clozapine induced

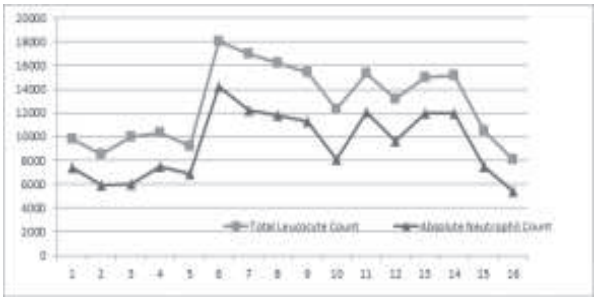

Figure 1 : Showing graphic representation of variation of weekly blood counts (Total count and Absolute Neutrophil Count)

leukopenia. There are hypotheses that explain regarding leukocytosis. There are reports of few patients developing leukocytosis as a result of TNF-alpha stimulation that results in increase of endogenous G-CSF production [4]. Smoking was present in some patients of schizophrenia who developed leukocytosis while on clozapine. It is thought that smoking may cause phenotypic changes in the leukocytes and also decrease the transit time through the bone marrow which may be a possibility for raised leukocytes.[5]

Conclusion

Leukocytosis with clozapine may be seen and so a cautious eye should be kept for it. This is mostly a benign condition but definitely the other possible causative factors should be ruled out through clinical history and examination.

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Case Report

Delusional infidelity associated with Dhat syndrome: a case report and literature review

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Introduction

Dhat syndrome is a culture bound syndrome characterized by preoccupation with semen loss and attribution of physical and psychological symptoms to the same. Indian studies on Dhat syndrome have found depression, anxiety, somatisation and hypochondriacal symptoms as common phenomenon, while erectile dysfunction and premature ejaculation as common associations with Dhat syndrome.[1] However delusional infidelity,in the background of Dhat syndrome has not been reported in scientific literature. We report a case of delusional infidelity in a young married male suffering from Dhat syndrome.

Case Report

A 30 year old married Hindu male presented in the emergency psychiatry facility with history of attempted self-harm. The patient had tried to consume rat poison when he was spotted by family members and brought to the hospital. His mother reported that his symptom began nine months back, soon after his marriage. The symptom was in the form of suspicion about the fidelity of his wife which was based on unfounded evidences, according to his mother.The patient would 'act out'on this belief by keeping a check on his wife, enquiring about her whereabouts, following her wherever she went. Though the patient claimed that he had seen her with other men, his mother denied those allegations saying those as friendly interactions. Whenever patient would confront his wife with these allegations, she would bluntly refuse them leading to frequent physical and verbal fights between them. Due to these fights and frequent allegations his wife decreased interaction with him and avoided intimate contacts which further strengthened his belief that she is in relation with some other man.Of late, the patient prohibited his wife from going outside the house and never left the house himself. One day his wife went out to buy some groceries without telling the patient, he became very angry and distressed. He went to consume rat poison but was apprehended by his mother and brought to the hospital.

The patient was very guarded initially and not much information could be obtained by him. He was kept under close surveillance as per the hospital protocols. After several supportive sessions, the patient began interaction and gave information about his other problems apart from the delusional belief. He gave a history of distress associated with passing of whitish discharge in urine for the last 15 yrs, associated with lethargy and anxiety symptoms. Due to this symptom, patient avoided masturbation and started remaining preoccupied by this symptom. He consulted friends and went to several faith healers and other para medical personnel. His family members sensed that something was troubling him and they brought him a proposal for marriage which he denied instantly. However he couldn't avoid them for long and when he got married about one year back, he repeatedly faced problems of early ejaculation and at times erectile dysfunction resulting into critical comments from his wife. He started having a sense of sexual inferiority and gradually he developed suspiciousness against his wife's sexual fidelity.For the last few weeks, there was decreased interaction and disturbed biological functions as well.

There was no history of any organic insult or any history of substance abuse. His unshakeable belief of jealousy was not associated with any referential or persecutory ideas, hearing voices/ seeing objects not heard/seen by others. There was no past history of taking any drug treatment or any suicidal/homicidal attempt in the past. There was no family history of any psychiatric disorder.

No physical abnormality was detected on examination. On mental status examination, patient was of average built, kempt and well groomed. Apart from the initial guarded response, the patient was later interacting well. However, he was constantly keeping a check on where his wife was and if she was talking to someone. He was alert, fully conscious and well oriented and also attentive. There was no abnormality in psychomotor activity or speech but he displayed mildly anxious affect. He did not display any aggression or violent behavior during the interview. He had overvalued ideas regarding semen loss and delusion of infidelity. There was no observed or reported sadness of mood, obsessions and no perceptual disturbance.Laboratory investigations were within normal limits.

Patient was diagnosed as having Delusional Disorder (jealous type) along with Dhat syndrome and was briefly admitted in view of possible self-harm. He was started on Risperidone 2 mg/day, titrated upto 6 mg/day. He was also provided with frequent supportive sessions and the risk of self-harm was constantly evaluated. He was discharged in few days after showing consistently low risk of self-harm but with advice to family members to be watchful and report as and when needed. There was gradual improvement in psychotic symptoms and patient showed significant improvement within 8 weeks. Patient was given psycho-education for symptoms of Dhat syndrome. He received risperidone for the next ten months and was maintaining well till the last follow-up.

Discussion

'Dhat syndrome', term first used in scientific literature by renowned Indian Psychiatrist Prof. N. N. Wig, is described as a specific syndrome nurtured as a result of culture related beliefs.[2] In stressful situations, an individual's focus of attention may shift to bodily symptoms like passage of white semen like substances in urine. In a recent Indian study, 55% patients with Dhat syndrome had no comorbidity, 13% had co-morbid depressive disorder, 15% one of the anxiety disorder, 14% erectile dysfunction and 17% premature ejaculation.[3]

Morbid jealousy is a clinical entity with a range of irrational thoughts and emotions, together with associated unacceptable or extreme behaviour.[4] The dominant theme is a preoccupation with a partner's sexual unfaithfulness based on unfounded evidence. The content of this psychopathological experience is the preoccupation with partner's sexual infidelity. The most commonly cited forms of this psycho-pathology are delusions (delusion of infidelity), obsessions and overvalued ideas.[5]

It has been suggested that morbid jealousy may arise in response to reduced sexual function. Cobb drew attention to the elderly man whose waning sexual powers were insufficient to satisfy a younger wife. [4]Vauhkonen described sexual dysfunction per se to be important, but whether this was considered to be primary or secondary is unclear.[6] Todd et al reported that real or imaginary hypophallism may give rise to feelings of inferiority and lead to the development of morbid jealousy.[7] Hence, sexual inferiority secondary to Dhat syndrome and premature ejaculation followed by the development of delusional infidelity in index case appears to be consistent with what has been reported in the literature.

In a UK population, Mooney found that 20% of individuals with delusional infidelity had made suicide attempts, given the association with depression and substance misuse.[8]This was also seen in our case who presented with suicidal attempt secondary to the delusional state of mind.

To summarise, index case highlights the fact that for better management, one should explore for possibility of Dhat syndrome in young males with delusional infidelity and also remain watchful of any emergence of delusionalinfidelity while management of patients with Dhat syndrome or other sexual dysfunction.

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Forthcoming Events

International

1. World Psychiatric Association International Congress, Berlin, Germany, October 8-12 2017.
2. 19th International Society of Addiction Medicine 2017 October 26, 2017 - October 29, 2017, Abu Dhabi, United Arab Emirates.
3. World Congress of the World Federation for Mental Health 2017 November 2, 2017 - November 5, 2017, New Delhi, India.
4. 27th World Congress on Psychological Disorders & Clinical Psychology November 02-03, 2017 Atlanta, USA.
5. The 7th Mind-Body Interface (MBI) International Symposium Taichung, Taiwan, 3rd Nov, 2017.
6. 24th International Conference on Psychology & Language Research (ICPLR), 09-10 Nov 2017, Singapore.
7. International Society for Traumatic Stress Studies 33rd Annual Meeting 2017 - Trauma and Complexity: From Self to Cells, November 9, 2017 - November 11, 2017 Chicago, United States.
8. 25th International Conference on Psychology & Language Research (ICPLR), 16-17 Nov 2017, Kuala Lumpur Kuala Lumpur, Malaysia.
9. International Conference on Advances in Nursing, Pharmaceutical and Medical Sciences (ANPMS-2017) Kuala Lumpur, Malaysia, 20th November, 2017.
10. 28th ICPLR 2017 - International Conference on Psychology & Language Research (Bangkok), 23 Nov – 24 Nov, 2017 Bangkok, Thailand.
11. International Conference on Public Mental Health & Neurosciences (ICPMN-2017) Mumbai, India.
12. Sexual and Gendered Violence Vienna, Austria, 2nd December, 2017.
13. International Conference on Psychiatry and Psychological Syndromes (ICPPS-December-2017) Sydney, Australia, 4th December, 2017.
14. 17th International Forum on Mood and Anxiety Disorders 2017, December 14, 2017 - December 16, 2017, Madrid, Spain.
15. 2nd Internacional Conference on Childhood and Adolescence Lisbon, Portugal, 25th January, 2018.
16. 26th European Congress of Psychiatry 2018, March 3, 2018 - March 6, 2018, Nice, France.
17. The Asian Conference on Psychology and the Behavioral Sciences 2018 (ACP2018) Kobe, Japan, 22nd March, 2018.
18. 03rd International Conference on Health and Medicine Bangkok, Thailand, 5th April, 2018.
19. 25th International Symposium on Current Issues and Controversies in Psychiatry (Barcelona & Live Video Streaming) 19 April 2018 - 21, April 2018, Barcelona, Spain

20. ESPRM 2018 — 21st European Congress of Physical and Rehabilitation Medicine, 01 May 2018 - 06 May 2018, Vilnius, Lithuania.
21. 25th Annual International STRESS AND BEHAVIOR Neuroscience and Biopsychiatry Conference St-Petersburg, Russian Federation, 16th May 2018.
22. Annual Meeting for Psychologists & Psychiatrists on Clinical Psychology May 24-26, 2018 Barcelona, Spain.
23. 2nd International Conference on neurology and brain disorders. 04 Jun 2018 - 06 Jun 2018 • Rome, Italy.
24. 2018 Conference on Applied Psychology (SCAP 2018) Singapore, 21st June, 2018.
25. 10th ICPLR 2018 - International Conference on Psychology & Language Research (Thailand), 28 June – 29 June, 2018 Bangkok, Thailand.
26. International Conference on Sleep Disorders and Medicine July 16-17, 2018 London, UK.

Indian

1. 24th National Conference of Indian Association for Social Psychiatry (NCIASP-2017), 17th-19th November, 2017, Guwahati, Assam.
2. 18 Annual 18th National Conference of Indian Association of Private Psychiatry, 2017, 23 - 26 November 2017, Jaipur, Rajasthan.
3. 10th SAARC International Psychiatric Conference, 15-17, Dec, 2017, Kolkata.
4. Annual Conference of Delhi Psychiatric Society, 24th December 2017 at Hotel Leela, Gurgaon(Haryana).
5. Indian Psychiatric Society 70th Annual National Conference 2018, February 5, 2018 - February 8, 2018, Ranchi, India

Guidelines

Instructions to Authors

Aims and Scope of the Journal

This journal is aimed to help in the academic development of its readers. To accomplish the objectives we publish following sections in the journal: Original articles, reviews, view points, short reports, case reports letters and newer developments.

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All the articles are published in this journal with the understanding that they have never been published or accepted in any journal previously or submitted to any other journal simultaneously. However, publication of abstracts in conference's abstract book will not be considered as prior publication if such abstracts are limited to 300 words. It includes all kind of printed material (whether scientific or not), symposia, panel discussion, paper/ poster presentation, workshops etc. If author/s are submitting any other paper with overlapping content to any other journal, they must inform the editor with the explanation of the differences in the paper.

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Start each of following section on a separate page.

Introduction: State the object of research with reference to previous work.

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For clarification see following reference styles.

Sample citations

According to our previous work,[1,3-8,19]
The Patient's were studied as follows.[3,4]

Sample References

- **Articles**
  1. Roest AM, Zuidersma M, de Jonge P. Myocardial infarction and generalised anxiety disorder : 10-year follow up. Br J Psychiatry 2012; 200 : 324–329.
  2. Bremner JD, Shearer KD, McCaffery PJ. Retinoic acid and affective disorders: The evidence for an association. J Clin Psychiatry 2012; 73 : 37–50.

- **Book**
  1. Stahl SM. The Prescriber's Guide (Stahl's Essential Psychopharmacology, 4th ed. Cambridge, U.K.: Cambridge University Press, 2011.

- **Chapter of a book**
  1. Blacker D. Psychiatric Rating Scales In: Sadock BJ, Sadock VA, editors. Kaplan and Sadock's Comprehensive Text Book of Psychiatry. Vol. I. Philadelphia: Lippincott Williams and Williams; 2000. pp 755-782.

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