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Contents

Editorial

Brain Gut Enteric Axis: a New Hypothesis to explain Neuropsychiatric Disorders 265
M.S. Bhatia, Nimisha Doval

Invited Editorial

Psychological & Mental health first and for all 267
Shruti Srivastava, M.S. Bhatia, Rashmita Saha, Nimisha Doval

Review Articles

Perceived Parental Support and Life Satisfaction among Adolescents 269
Vinita Tiwari, Saroj Verma

Management of Post-Traumatic Stress Disorder in Children 278
Amandeep Bhandal, Tania Sultana, Mustaq Siddique

Original Research Articles

Child's gender and parenting styles 289
K. Vyas, S. Bano

Association of Cardiovascular disease risk variables with depression in Urban population of Delhi, India 294
Astha Bansal, P.C. Joshi

Depression and Loneliness in Old age: A Study of Delhi and Gurgaon Region 303
Aastha Dhingra

Cognitive Behavior Therapy of Obsessions connected to strong value system 312
Reema Gupta

Suicidal ideation and Stress in Epileptic patient in Meerut 317
Antul Tyagi, Alpana Agarwal, S.P. Bharti

Comparing Spiritual Well-being, Perceived Social Support and Defense Mechanisms in Hemodialysis Patients and Healthy Individuals 320
Hadis Cheraghian, Maryam Safara, Syed Amir Ghedami, Fateme Khanbeiki

Mental health literacy of adults in urban and rural areas of Mangalore 328
Dhanya K. Vijaya, Agnes E. Jose

To study pattern Performance of Cognitive Functions Among Cannabis and Opioid users so as to enhance Psychosocial Rehabilitation 334
Rupesh Chaudhary, Pankaj Kumar, B.P. Mishra

Socio-Demographic Profile of Psychiatry patients seen at PHC & CHC level — DMHP experience 339
Vipul Singh, Saurabh Agarwal, Sudhanshu Misra, Sandeep Singh, Rizwana Parveen

Pattern of Bender Gestalt Test Performance in Schizophrenia, OCD and Normal Groups 346
Urmi Chakraborty

Attitudes towards Lesbians and Gay Men among Mental Health Professionals and trainees 354
Arif Ali, Buli Nag Daimari , Harikrishan H, Bhaskar Nag

A descriptive study to assess the knowledge, attitude and practices regarding prevention of relapse among substance dependent patients and their caregiver in DDTC, PGIMER, Chandigarh in 2014-15 362
Sandhya Ghai, Renu Sharma, D. Basu

ECT Use in Pregnancy—A Retrospective Review of cases from a Tertiary Centre 370
Harshal Sathe, Mosam Phirke, Avinash De Sousa, Nilesh Shah, Sushma Sonavane

Job Satisfaction and Burnout among Professionals: An Indian Perspective 374
Prashant Srivastava, Swarnlata Kumari, Manisha Kiran, Amool R. Singh

Mental Health Legislation in India: Need for revision or implementation? 379
Shruti Aggarwal, Dinesh Kataria, Shiv Prasad

Psychomicrobiology

Irritable Bowel Syndrome, Associated Microbiome and its Correlation with Psychiatric Disorders 386
Shalini Malhotra, Nirmaljit Kaur, Preeti Madan, Geetika Rana, Pradeep Kumar, M.S. Bhatia

Psychophysiotherapy

Management of Chronic Pain with Psychophysiotherapy 393
Jaswinder Kaur, Megha Masaun, M.S. Bhatia

Rehabilitation of Myocardial Infarction: Focus on Psychophysical Aspects 399
Deepti Garnawat, Jaswinder Kaur, M.S. Bhatia

Commentary

The Selfie Syndrome – A brief commentary 403
Pragya Lodha, Avinash De Sousa

View Point

Parenting Consequences on Children Outcomes 407
Somayeh Keshavarz, Maryam Safara, M.S. Bhatia

Drug Review

Buprenorphine Implant: A new option for Opioid Dependence 413
Rashmita Saha, Nimisha Doval, M.S. Bhatia

Forensic Psychiatry

Psychosocial Aspects of Child Sexual Abuse: A Brief Overview in Indian Perspective 417
Pradeep Kumar, Suraj Kumar, Sushma

Forensic Aspects of People with Dementia 422
Amandeep Kaur, Khurram Janjua, Sandra Veigne

Case Reports

Familial Transmission of Mental illness in offsprings of Bipolar Affective disorder 427
Priyanka Sharma, Sandeep Choudhary, (Brig) S. Sudarsanan, Ayush Sharma, Sandeep Antil

A rare case of Firesetting of House and Planned Homicide due to Delusional Jealousy 429
Neeraj Mittal, B.S. Sidhu, Daljeet Singh

Temporal Lobe injury and its Psychiatric Sequelae 432
Nimish Gupta, Supriya Agarwal

Mirtazapine induced somnambulism in a case of Geriatric Depression 436
Avinash De Sousa, Sagar Karia

Mood disorder in Intellectual Disability 438
Nimisha Doval, Rashmita Saha, M.S. Bhatia, Aparna Goyal

World Health Day 2017 440

Interesting Articles 442

Forthcoming Events 443

Instructions to authors 447

Copy Right Transfer Form 450

Membership Form 451

Editorial

Brain Gut Enteric Axis: a New Hypothesis to Explain Neuropsychiatric Disorders

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Gut microbiota is a complex community that helps to maintain dynamic metabolic ecological balance.[1] Of the trillions of bacteria, 80% exist in the gut, which are mainly anaerobic and dominate the environment. With development, gut microbiota keeps changing and is influenced by a variety of stress factors.[2] Gut microbiota has various functions including intestinal barrier function, regulation of the mucosal immune system, GIT motility, epithelial barrier function, support for digestion as well as host metabolism, prevention of colonization by pathogens, intestinal synthesis and metabolism of certain nutrients, hormones and vitamins etc.[1-3]

Off late, there is growing interest in role of microbiota in the development of both central and peripheral neural processes the interactions being variously termed "brain-gut-enteric microbiota axis" or the gut brain axis.[4] Gut microbiota-brain axis may include gut microbiota and their metabolic products, enteric nervous system, the autonomic nervous system with both, sympathetic and parasympathetic branches, neural-immune system, neuroendocrine system, and central nervous system.[2,5] These interactions are often bidirectional with the signals from the brain influencing the motor, sensory, and secretory functions of the GIT and conversely, visceral messages from the GIT affecting the brain function.[5] The role of HPA in gut brain axis, as well as the possibility of the role of microbiota in the development of the core neuroendocrine axis, the HPA itself, which is responsible for most of the physiological and psychological responses to stress, is noteworthy.[6]

The routes of communication between gut microbiota and brain have been postulated to include the the neural, humoral, immune, metabolic pathways as well as neuroendocrine-HPA axis, some neurotransmitters and neural regulators synthesized by gut bacteria, and barrier paths including intestinal mucosal barrier and blood-brain barrier.[1,7] By these possible ways of communication, the brain and gut can mutually affect each other's function.

There is some evidence of implications of disruption of this axis leading to a range of neuropsychiatric disorders ranging from Alzheimer's disease, the irritable bowel syndrome (IBS) to depression, anxiety spectrum disorders and even autism spectrum disorders.[4,8]

The best evidence for the involvement of the microbiota in disease states comes from IBS, a prototype of stress-related brain–microbiota axis disorder.[9] The persistent elevation in rectal mucosal enteroendocrine cells, T-lymphocytes and gut permeability following the infections could be the link between alteration in gut micrtobiota and pathophysiology of IBS.[10]

The treatment with Lactobacillus rhamnosus reduce stress-induced anxiety and depressive type behaviors in mice by modulating the GABAergic systems. Analogous to these findings, probiotics reduced stress-induced release of cortisol, anxiety- and depression-related behaviour.[11] The capability of bacterial species Lactobacillus and other Bifidobacterium species in metabolizing glutamate to GABA, a key mediator in anxiety disorders suggests its role in these disorders.[12] There are anxiolytic properties of probiotics L. helvetics and B. longum in humans with anxiety disorders.[13]

Disturbance of gut microbiota may directly lead to increased intestinal permeability and blood brain

barrier permeability, leading to systemic and CNS inflammation, ultimately resulting in the occurrence of neuropsychiatric disorders like Alzheimer's.[9] Although the causal relationship between the microbiota changes and the pathogenesis of Parkinson Disease remains unclear, it is possible that the gut microbiota changes associated with intestinal inflammation may contribute to the initiation of α-synmisfolding.[14]

There are reports of symptom improvement in autism with antibiotics.[15] The gut -brain axis and microbiome-host interaction play a significant role in aetiology of autism and carbohydrate availability is the most important nutritional factor which could control the composition and metabolic activities of microbiota and bacterial species diversity.[16]

The microbiota-brain interaction is a relatively new area of research which may provide fresh insights into about various effects it may have in the cognition, affect and overall psychological state of an individual and thereby the possible contribution probiotics and other such agents could make in the management of a whole range of neuropsychiatric disorders. Gut microbiota-brain axis refers to a bidirectional information network between the gut microbiota and the brain, which may provide novel treatment strategies for a variety of disorders like anxiety and mood disorders, Alzheimer's, pain and stress responses in the near future.

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Invited Editorial

Psychological and Mental Health First aid for all

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World Mental Health, 10th October is celebrated every year all over the world to create awareness, education and advocacy regarding various aspects of mental health. World Federation for Mental Health first celebrated this day in 1992. In the year 2016, World Health Organisation (WHO) declared "Psychological and Mental Health first aid for all" as the theme. Though the message of first aid is widely disseminated and engrained across all cultures, it largely covers physical health. Mental health first aid is a grossly neglected issue which has been taken as the theme this year to equip various agencies on providing psychological first aid also as a part of comprehensive management in disaster management. WHO has prepared a manual in this regard which is quite self explanatory as to how to provide psychological first aid.[1]

In a developing country like India, with a population of over a billion, a wide gap exists between the available resources and a large manpower. The big challenge is to create awareness and train manpower about providing psychological first aid. The goal of mental health first aid will in turn take mental health out of the dark shadows and encourage the general public to change its perception and stop stigmatising and discriminating patients suffering from mental illnesses and their caregivers.

Media plays a pivotal role in spreading awareness of Psychological first aid throughout the country.[2] Several public lectures were organised in several parts of the country to propagate this years theme. Training programme of medical college staff, religious leaders and health volunteers was organised on Psychological first aid in Delhi, University College of Medical Sciences & Guru Teg Bahadur Hospital including distribution of hand outs in order to equip the tertiary care hospital with mental first aid.[3]

The main emphasis in the event of a disaster is to assist in the relief work of various agencies and not to be an obstacle in providing food, shelter, clothing. Also to facilitate the victims establish contact with their social contacts. The medical needs including special care to the elderly, children, pregnant and those suffering from mental disorders or disabilities needs to be addressed first and with foremost priority in the camps providing care.

Do's of the Psychological first aid includes listening to the victims, proving emotional warmth and making the client feel comfortable and calm them down, lower their distress. Empathy and active listening help the victims ventilate their feelings and emotions. Both verbal and nonverbal communication skills including maintaining eye to eye contact and sitting in an alert posture, communicating by appropriate nonverbal gestures that encourage clients to speak out are a key in the management. Practical guide to the problems faced by the victims need to be provided alongside other relief measures in a disaster situation. The victims who are already facing tremendous stress, steps should be taken to handle them with dignity, self respect and interventions need to be carried out in safe environment providing privacy. Thus, the three main principles in the event of crisis management are focussing on how to look at their problems (by checking for safety, addressing basic needs, checking for distress reactions), listen (by approaching people, ask about their needs, make them calm down) and link (by giving information, connecting with their loved ones and social support).

In the end, role should be finished with the supervisor acknowledgement that they were able to provide some help in small ways and there are limits in this kind of work that should be acceptable to the individual. The supervisor shouldn't feel

burdened and take some time out in order to manage their own stress. Table summarizes the key points necessary for achieving mental health for all.

Table : Key Points of Psychological first aid

- Emotional support
- Resilience and protection of healthy population from mental disorders by stress management, relaxation exercises, yoga.
- Mobilization of resources for providing first aid in event of natural disaster and family support
- Crisis intervention
- Strengthening of mental health services by involvement of local community, medical staff, teachers, police and social workers.
- Counseling for emotionally distressed individually
- Setting up of help lines
- Prevention of mental disorders
- Early intervention in mental disorders and effective management

In order to best manage our nation in an event of disaster or calamity or an untoward incident, we need to create healthy lifestyle. Engaging in Yoga, long walks, physical exercises, focussing on main objectives, planning realistic goals, setting targets that can be met, timeouts in the form of vacations, indulging in hobbies, building social supports, healthy diet and inculcating good communication skills need to be inculcated in order to make our society resilient.

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Review Article

Perceived Parental Support and Life Satisfaction among Adolescents

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The purpose of this article is to provide a review of the extant research on adolescents' life satisfaction, and parental support as its correlate. A central factor in adolescents' health and well-being is adolescents' interactions with their environments, with the people and settings in their daily lives. Because of the perceived importance of the parent-child relationship, considerable research has examined the influence of parenting behaviors on adolescents' well-being. Historically, research has identified a twofold influence of parental behaviors on children and adolescents. First, the extent to which adolescents experience a positive, affective, personal relationship with parents (support); and second, the type of control exercised over children's behavior.[1,2]

Comprehensive perspectives on well-being that include positive aspects of human life such as subjective well-being have recently been proposed. Life satisfaction is the cognitive component of subjective well-being and plays an important role in positive development of adolescents.[3] It is an important construct in positive psychology.[4] Life satisfaction, or perceived quality of life, is one broad construct, which encompasses the full range of functioning from "very low" to "OK" to "very high", and has received increasing attention as an indicator of optimal functioning among youth[5]. Life satisfaction has been defined as a subjective appraisal of the quality of one's life overall or with specific domains.[6] Research has documented many benefits for individuals with high life satisfaction. Such benefits include physical health, mental health, good interpersonal relationships, and educational and vocational success.[3,7] Life satisfaction functions as a buffer against the impact of stressful life events on developing psychopathology.[8]

Although many studies of life satisfaction of adults have been conducted, life satisfaction in adolescence has only recently become the focus of empirical work. Collectively, demographic factors (e.g., age, gender, SES, race) are relatively weak predictors of adolescents' life satisfaction.[9] Several personality variables including self-esteem, locus of control, and extraversion are significantly associated with children's life satisfaction.[10] Environmental factors, such as participation in extracurricular activities,[11] neighborhood, major life events, and family experiences[12] are all signiûcant predictors of adolescents' life satisfaction. Stronger predictors involve interpersonal relationship variables. Studies have highlighted the quality of interpersonal relationships, such as attachments to parents, which may serve as possible determinants of individual differences in adolescent life satisfaction.[13]

Different theoretical perspectives specify mechanism through which parental support influences adolescents' psychological well-being. Identity theory assumed that the self is a product of social interaction. People become aware of themselves through observing how others treat them as objects in interaction.[14] According to this view, the self-concept is shaped by symbolically communicated information received from significant others (such as father-mother, other family members, friends and teachers etc. Positive reflected appraisals promote positive self-evaluations and greater self-esteem. Parental support is a positive reflected appraisal that influences adolescents' self-evaluation and self-esteem.[15]

Attachment theory provides one explanation of the developmental origins of self-perceptions related to acceptance by asserting that adult views about the availability of acceptance and support from others constitute an attachment style that is largely the product of early childhood relationships.[16] Children who experience their parents as caring and comforting are more likely to carry an expectation that the world will be accepting into other relationships throughout their lives. They are also more likely to develop a view of themselves as worthy and deserving of love. According to attachment theory, insecure representation of attachment relevant relationships with parents carries over into children's relationship with others, including peers and friends.[17]

Modeling is one of the most cited mechanisms through which parental behavior is expected to affect children.[18] The basic view of modeling theory is that children tend to imitate their parents.[19] Therefore, predicting that children whose parents are supportive will learn sociability among peers.[20] Schudlich and Cummings[21] explored that parental depression was associated with increased depression and other internalizing behaviors in a sample of adolescents. One way that children's perceptions of parent behavior can impact behavior with peers is through a process of modeling, with children imitating behaviors that parent model during parent – child interactions.[22]

Demographics and Life Satisfaction

Studies have renowned specific relationships between demographic variables and adolescents life satisfaction. Gender particularly seems to be an important correlate since gender differences in well-being begin to increase during adolescence due to psychosocial and biological-hormonal changes[23]. In addition, there are gender differences in the risk and protective factor structure of adolescent health behavior, health and well-being.[24] Ash and Huebner[25] found that SES was positively related to life satisfaction (i.e. lower SES students reported lower life satisfaction than higher SES students). Similarly, Huebner et al[26] reported a significant difference for race among American students using the Brief Multidimensional Student's Life Satisfaction Scale (BMSLSS), such that Caucasians reported higher life satisfaction than African-Americans. Family structure was found to be related with adolescents' life satisfaction.[27,28]

Personality and Life Satisfaction

Findings from corelational research have shown life satisfaction to be associated with self-esteem,[29] health-related quality of life,[30] hope,[31] self-efficacy,[32] participation in structured extracurricular activities (SEAs)[33] and academic achievement[11], and negatively correlated with psychopathological problems such as depression and social stress[11]. Moreover, recent research suggests that increased life satisfaction buffers against the negative effects of stress and the development of psychological disorder. Throughout the research literature, scores on measures of life satisfaction are used as an indication of happiness or unhappiness[34]. Individuals with positive subjective well-being have consistently been shown to report high levels of life satisfaction, as well as, satisfaction across multiple life domains (e.g., marriage, income, physical health), positive emotions, increased mental health, and a longer life.[35]

Environmental variable and life satisfaction

Various environmental variables such as parenting behavior, parenting style, family composition, inter-parental relationship, parent-child conflict, social support, and cultural influences were stronger predictors of adolescents' life satisfaction. Research to date indicates that adolescents' life satisfaction is associated with a range of different family characteristics, including parental involvement, positive parent–child relationships, and parental social support.[5,11,36] Parental psychological control is related to higher levels of hostile affect and lower level of personal efficacy, self-esteem and life satisfaction.[29] Suldo and Huebner[8] reported that higher parental monitoring and low psychological control are related to life satisfaction during adolescence and life satisfaction is negatively related to both internalizing and externalizing behavior. Life satisfaction is lower among adolescents who experience high conflict and disagreement with their parents and high family-related stress.[25,32] Such research clearly indicates that family processes and relationships are linked to adolescents' life satisfaction. Life satisfaction may differ across social, situational, personality and cultural factors.

Role of Parental Behaviors in Adolescents' Life Satisfaction

Correlational research has highlighted the role of familial variables, such as, family structure, parenting style, parental emotional and social support, and family conflict, as crucial in the attainment of adolescent life satisfaction. In parent-adolescent subsystems, parents are primarily responsible for fulfilling family functions such as providing nurturance and guidance.[37] Baumrind[38] defined parenting Style (PS) to be a consistent pattern with which parents interact with their children along two dimensions: demandingness and responsiveness. Demandingness refers to parental efforts to integrate children into the family through maturity demands, supervision, discipline, and willingness to confront behavioral problems. Responsiveness refers to the extent to which parent foster individuality, self-regulation, and self-assertion by consenting to or being aware and supportive of children's needs and demands.

Based on the degree of responsiveness and demandingness employed by parents in rearing their children, Baumrind[39] classified three parenting styles: authoritarian, authoritative, and permissive. Parents who were classified as authoritative exhibited high levels of support and responsiveness toward their children while exerting firm control and conveying clear guidelines about their expectations for them. Authoritarian parents showed low support or responsiveness toward their children, but exercised high levels of control. These parents demanded obedience, but provided little encouragement or praise. Finally, permissive parents were characterized as high in support and low in control. They often responded favorably to their children, but imposed very few rules. The neglectful parenting style was introduced later as a fourth style.[40] Neglectful parents were low in support or responsiveness and low in control; that is, neglectful parents appeared largely uninvolved in their children's lives. In addition to warmth and control, psychological autonomy granting has been added as an additional dimension of authoritative parenting.[41] Autonomy granting describes the degree to which parents maintain a reciprocal relationship with their adolescents, allowing them to actively participate in making decisions.[42] Early studies on parenting style appeared to indicate that the authoritative style of parenting was more adaptive than the other styles, relating positively to a number of behavioral and academic outcomes in children.[43,44] Additionally, authoritarian and neglectful parentings were found to relate negatively to behavioral outcomes,[45,46] while the effects of the permissive style were uncertain.[40]

Role of Parental Support in Adolescents' Life Satisfaction

A positive and stable emotional bond between parents and adolescents is an important protective factor for adolescents' health and development. All parents wish their children to live happily and healthy, but the challenges increase for parents as their children move through adolescence.[3] Early investigations of the association between parent-child relations and adolescent well-being focused on parental support. Parental support consists of variables such as acceptance, nurturance, open communication, responsiveness and expressive affection.[3,47] Rollins and Thomas[48] defined parental support as a behavior manifested by a parent toward a child that makes the child feel comfortable in the presence of parent and confirms in the child's mind that he is accepted and approved as a person by the parent. Research with adolescents indicated that attainment of life satisfaction is more strongly associated with positive relationships with parents.[11,25,36,49]

Suldo and Huebner[5] found evidence for the importance of parental support for adolescent well-being by examining individuals with very low, average, and very high levels of life satisfaction. Their results indicate that the level of parental support was different for all three groups of adolescents, with greater support associated with higher satisfaction. Parent support was found to be a necessary factor for high levels of life satisfaction. Adolescents in the high satisfaction group reported above-average levels of parental support.

Suldo and Huebner[5] found that all three dimensions of the authoritative parenting style: social support-involvement, strictness-supervision, and psychological autonomy granting were positively related to life satisfaction among adolescents, with perceived parental support having the strongest correlation. Specifically, an interaction effect was found between life satisfaction and parental support

such that the influence of parenting behaviours on adolescent global life satisfaction decreased as age increased. In addition, this study also indicated that life satisfaction fully mediated the relationship between parental support and problem behaviors in adolescents, and partially mediated the relationships between parental control and problem behavior and between parental autonomy granting and problem behavior.

Discrepancies between adolescents' and Parents' Reports of Parenting

It is important to note that most of the conclusions about the association between parenting style and children's/ adolescents' psychosocial outcomes are based on parent or observer reports of parenting. It is important also to consider adolescents' perceptions of parenting as predictors of adolescents' psychosocial adjustment, as adolescents' perceptions may influence how they respond to parenting. Adolescents' perceptions of parenting have been shown to be related to adolescents' psychosocial adjustment with the direction of the association dependent on the dimension of parenting being rated — for example, adolescents' perceptions of parental support tend to be associated with more positive adolescents' outcomes, and adolescents' perceptions of parental psychological control tend to be associated with more negative outcomes.[50]

A number of studies have shown that adolescents' perceptions differ from parents' self-perceptions[51] and that these discrepancies are related to adolescents' outcomes.[52] Family systems theorists have proposed that a lack of correspondence in parent and child may reflect family disorganization and a lack of cohesion, and thus would predict more negative child outcomes.[53] Scherer et al[54] found that more parent – child disagreement about parenting was related to more behavior problems and less social competence. According to this perspective, the size of discrepancies in either direction (i.e., parents' self-report scores higher than children's scores, or children's scores higher than parents' self-report scores) would predict more negative outcomes for children. An alternative perspective focuses on the idea that, if children's perceptions of parenting affect children's outcomes, then the direction of the discrepancy would be important for predicting child outcomes.

Gaylord, Kitzmann and Coleman[50] examined association in parents' and children's perceptions of parenting and associations between these perceptions and children's psychosocial outcomes. Children and parents reported on parenting behavior.Parents' self-reports and children's reports about parents showed systematic differences. Parents perceived themselves as more supportive than children perceived them to be. Direction of discrepancy between child and parent reports appeared to be more important than size of discrepancy in predicting child outcomes. Hierarchical regression analyses showed those parents' self-perceptions of parenting and children's perceptions of parenting were predictive of different measures of child psychosocial adjustment (i.e., internalizing, externalizing, and acceptance by peers). The results of this study support the assumption that parents' self-perceptions and children's perceptions of parenting provide unique views of the family and unique relations to children's psychosocial adjustment.

Cultural Influences

Changes in parent-child relations during adolescence may differ cross-culturally due to different developmental pathways which may be characterized by the culture-specific concepts of independence or interdependence.[55] While individualistic cultures emphasize the developmental pathway of independence which values the development of autonomy, in collectivistic cultures the pathway of interdependence prevails which highlights family relationships and obligations. Although attachment is a universal phenomenon, there may be cultural variations in the ways it develops. For example, cultural differences in the meaning of showing sensitivity have been reported by Rothbaum et al.[56] The meaning of certain parenting techniques also varies cross-culturally. While parental acceptance is universally related to positive child outcomes,[57] the results differ with respect to parental control which is perceived as constraint by adolescents from individualistic contexts, but experienced as a support by adolescents from collectivistic contexts.[58]

Social and economic changes have an impact on socialization practices, but traditional cultural beliefs, strongly linked to Hinduism, still influence

child-rearing in India.[59] The detachment and separation of parents from the lives of their adolescent children that is emphasized in middle class European/American contexts and elsewhere in certain Western cultures, is not experienced by Indian adolescents. In contrast, the involvement of parents in the everyday life activities of adolescents is not only well accepted, but is also expected. Adolescents' reliance on parents' advice is not regarded as a sign of immaturity or as a threat to individual self-direction, but as a source of welcome support and guidance in helping to insure successful transition to adulthood.[60] Indian family system characterized by control reduces vulnerability of adolescents to deviate from mainstream, as parental authority always keeps their activities under check.[61,62]

Compared to abundant research on the subjective well-being of adults, only a few studies have been conducted with children and adolescents across cultures. Indeed, there is a general need for research that investigates cultural influences on adolescents' well-being. Cultural factors may influence children's cognitive, emotional, and social development and their overall well-being through different social and cultural experiences of parenting, family life, and schooling. Although some values are universal, other values are emphasized to different degrees in different cultures. The importance of perceived family relationships to adolescents' life satisfaction is similar across cultures. The greater contribution of satisfaction with family life to global life satisfaction has been shown among Chinese students[63] as well as U.S. students.[64] However, cross-cultural studies have found that Western adolescents in individualistic cultures tend to pay more attention to the self than do their Asian counterparts, who are raised in collectivistic cultures that emphasize filial piety, harmony, moderation, and family and social obligations.[65] A study with Chinese youth in Hong Kong found a weak relationship between life satisfaction and self-concept.[63] These results are consistent with other findings from adult samples documenting stronger relations between life satisfaction and self-esteem in individualistic countries than collectivistic countries.[65,66]

Mayer, Trommsdorff and Mishra[67] compared Indian and German adolescents' perceptions of their mother's parenting behavior as well as their relationship quality with mothers and fathers in relation to adolescents' life satisfaction. Results indicated that Indian as compared to German adolescents experience more controlling parenting and that parental control is positively related to adolescents' life satisfaction in India while no such relation is found in Germany. Parental rejection is found to be negatively related to adolescents' life satisfaction in Germany. The association between parent–child relationship quality and life satisfaction is found similar in both cultures.

Tamini and Mohammadyfar[68] investigated mental health and life satisfaction of students of Iranian and Indian Universities. Results revealed that Indian students' mental health situation is better than Iranian students. Indian students are also found more satisfied with their lives. Sheldon, Abad and Omoile[69] compared Indian and Nigerian adolescents' perceived maternal and paternal autonomy-support and life satisfaction. Results indicated that perceived maternal and paternal autonomy-support both predicted life satisfaction, and Indian students reported greater life satisfaction than Nigerian students.

Oishi and his colleagues[67] value as moderator of subjective well-being model provides a framework for understanding the relationship between culture and subjective well-being. According to this model, individual differences in life satisfaction judgments are related to salient value orientations. That is, people evaluate the importance of a domain for their life satisfaction higher when that domain is central to their core values. Thus, culture may determine the relative importance of various life domains to global life satisfaction by influencing an individual's values. For example, for people from Western cultures such as the United States, where independence and personal feelings and interests are highly valued, self-related domains are more important for their judgments of life satisfaction. On the other hand, for individuals from Asian cultures such as Korea, where family and social obligations and education are highly valued, meeting these social norms and expectations are the primary sources of life satisfaction.

Implications

In general the research literature suggests that adolescent's perception of parental support is

positively associated with the life satisfaction among adolescent**.** Review of the studies suggests that adolescents are influenced more by their perceptions of parental attitudes and behaviors rather than by actual parental attitudes and behaviors, and their satisfaction with life is negatively correlated with perceived differences between parent's and adolescents' perception of parenting.[50,57] This review has presented the extant findings in the adolescent life satisfaction literature. This review suggests that parental support during stressful periods of transition predicts positive adolescents' adjustment and satisfaction with their lives. It also educates parents to recognize the continued importance of their relationship with their adolescence. Parents need to be available to their adolescents, supportive and actively engaged in negotiation of increased autonomy and self-reliance. Parents need to anticipate that their adolescent will require increased availability and support during periods of transition, such as entry into high school. Parents should support their adolescents in effective planning and management of this transition.

Future Directions

This review is based on correlational studies which indicate that positive parental support is positively associated with life satisfaction. Additional research is required in order to further discover causal pathways through which parental behaviors effect and influence how adolescents perceive their lives. Future research should utilize longitudinal designs to assess the associations among parenting and life satisfaction. Ideally, multiple informants should also be employed in order to ensure the best measurement of parenting behaviors, as actual parent behaviors may differ from adolescents' perceptions of their parents' behaviors. Indeed, there is a general need for research that would investigate cultural influences on parenting behaviors and adolescents' well-being. Although few cross-national and/or cross-cultural studies of children and adolescents have been conducted which indicates that attachment is a universal phenomenon, there may be cultural variations in the ways it develops. More specifically, further research is required to determine the differences between individualistic and collectivistic cultures and whether additional measures are required in order to overcome these differences. There is a need of research to shape parenting behaviors which would promote adolescents' satisfaction with their lives.

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Review Article

Management of Post-Traumatic Stress Disorder in Children

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Introduction

Exposure to traumatic life event can have devastating effect on the lives of children as traumatic experience in childhood may lead to a deviation in developmental trajectory[1] and predispose them to developmental, mental, physical and socio-economic morbidity (see table 5). The incidence of PTSD as diagnosed using DSM-IV was found to be less than 0.5% in one studied children population[2] and around 13.4% children were shown to suffer from post – traumatic stress symptoms (PTSS) without meeting PTSD criteria[2]. As a result of increasing amount of studies done on children with PTSD, DSM-5 task force felt a need to change DSM-5 criteria for pre-school children.[3] For the first time, a developmentally sensitive subtype of PTSD was added – PTSD Preschool subtype[4]. This was a major improvement in the diagnostic criteria of PTSD in children 6 years and younger which resulted in tripling of PTSD prevalence rate in comparison to DSM-IV.[5] The addition of new category is also a step forward in managing PTSD in a more organized and structured manner.[6]

Terr classified childhood trauma into three types: type I which is due to single traumatic event such as death of loved one, natural disaster, physical injury; type II which involves multiple traumatic events over a prolonged event such as sexual/ physical abuse, war related trauma; type III, crossover type in which exposure to single traumatic event leads to a cycle of stress[7]. Chronically occurring trauma during the developmental period of life can give rise to complex PTSD with additional features comprising of difficulties in emotional regulation, negative self-concept, and interpersonal relations.[8] Management of complex trauma which is due to chronic stress needs more intensive and prolonged treatment[9]. It is important to treat PTSD in children as untreated PTSD can follow a chronic course even after 5-8 years after trauma.[10] In this evidence-based review article, we would discuss the management of PTSD in children.

Management

A) Screening

Pediatrician are often at forefront to screen children and provide office-based interventions as approx. 25% of children visiting pediatricians have been shown to meet the criteria of PTSD at some point.[11] It is crucial to refer children suspected of suffering from PTSD or susceptible to PTSD to mental health care professionals for e.g. surgeons could refer burn patients during their hospital stay for psychiatric interventions.[12] Treating nurse of any discipline should be trained to identify and help child who have dissociative symptoms.[13] Appointments made before the patients leave hospital premises may improve follow up visits.[14] Regular follow up may be advisable in order to restrict the emergence of negative mental health outcomes in children.[15] Preventive therapies such as Child and Family Traumatic Stress Intervention has been shown to be effective in preventing PTSD when given within 30 days of traumatic experience.[16]

B) Diagnosis

PTSD signs and symptoms should be directly assessed from children[24] taking into account that children may provide a highly variable account of their symptoms.[25] It is equally important not diagnose

PTSD on the basis of signs and symptoms reported by parents, teachers or caregivers as they have been shown to often underreport symptoms as they tend to believe in resilience of children.[26]

Table-1. Common Causes PTSD in children and adolescent

— Interpersonal violence[17]
— Sexual violence[18]
— Natural disasters like Tsunami,[19] earthquake:[20] feeling trapped in situations of natural disaster, feeling helpless and unable to escape has a higher incidence rate.[19]
— Pediatric injury.[21]
— Medical and surgical health issues: Burns,[22] cancer[23]

Table-2. Signs and Symptoms

• Blank expression in circumstances which do not normally produce such expressions[27]
• Fearful facial expression[27] and activation of new fears[28,29]
• Regression[28,29]
• Heightened irritability[27]
• Social withdrawal[30]
• Decline or delay in developmental accomplishment[30]
• Difficulty coping with frustration[30]
• Engaging in reckless behavior[28,29]
• Sleep problems: difficulty falling asleep, multiple night awakening[27]
• Psychosomatic signs and symptoms such as stomach aches[28,29]

* The signs and symptoms of PTSD in children with Intellectual Disability (ID) are no different than children without ID[31].

Many screening scales are being used to diagnose PTSD in children as shown in table. In cases of children who have been sexually abused, it may be more beneficial to extract information from traditional method of interview rather than using standardized instruments.[32] Another area in which urgent research is needed is devising a screening scale for PTSD symptoms is in refugee children and studies assessing the reliability and validity of existing tools in these children.[33]

Differential Diagnosis

Children with PTSD may present with concentration problem or hyperactivity which may lead to misdiagnosing them as ADHD.[48] Schizophrenia should also be excluded from differential diagnosis as re-experiencing PTSD symptoms does not mean that the child is suffering from hallucinations.[49]

C) Psychotherapy

Trauma-Focused cognitive behavioral therapy (TF-CBT), developed by Deblinger, Cohen and Mannarino in 2006[50] is the mainstay of treatment in children suffering from PTSD.[6] It is usually given for a period of 12-16 week outpatient therapy that has been shown to be beneficial in reducing the symptoms and severity in children with PTSD including sexually abused children and preschool children.[51,52] It has been shown to preferentially reduce hyper arousal and avoidant features in comparison to re-experience of trauma[53].TF-CBT also reduced comorbid disorders such as depression, separation anxiety[54], and behavioral problems including sexual.[52]

Table-3

Scales used by Children	Scales used by Parent/ caregiver
Children's Impact of Traumatic Events Scale Revised[34]	Trauma Symptom Checklist for Young Children[24].
Children's Attributions and Perceptions Scale[35]	Children Behavior Checklist[39]
Children's PTSD Inventory[36]	Child Sexual Behavior Inventory[40]
Trauma Symptom Checklist for Children[37]	
Impact of Event Scale for Children[38]	

Table-4. Predictors PTSD

— Exposure to traumatic events: more intense the exposure, more vulnerable is the child[41]
— Child's perception of the traumatic event[41]
— Preexisting conditions such as chronic physical illness[42]
— Parental functioning[43,44] and support[45]
— Gender: Females have more chronic course[43]
— Peritraumatic dissociation[43]
— Mild to borderline intellectual disability (IQ 50-85), a group at risk for PTSD[46]
Socio-economic status: low SES may predict a turbulent post trauma adjustment[47]

* Brown et al., in 2016 have shown that Acute Stress Disorder (ASD) may predict development of PTSD later on[46]. Hence, it is recommended that patients with ASD patients be provided extra resources on their discharge[47].

Components of TF-CBT[50]

Psycho-education and parenting skills
Relaxation skills
Affect expression and regulation skills
Cognitive coping skills and processing
Trauma narrative : Greater time devoted to narrative led to greater reduction in fear and distress whereas lesser time devoted to narrative led to lesser disruption in behavior (due to greater time spend with parent training)[55]. KIDNET is an

8-week narrative therapy that utilizes more symbolic materials[56] and has been shown to be more suitable for refugee children[57].
In vivo exposure (when needed)
Conjoint parent-child sessions
Enhancing safety and future development

TF-CBT for children is implemented talking into account two developmental considerations – the children are assessed according to their age and sensitivity and no offending caregiver is involved, although caregivers perpetrating violence such as in cases of domestic violence can also participate parallel depending on the needs of the child.[50] In absence of a competent caregiver, any adult who has built trustful relation with the child may participate[50]. It has been found that TF-CBT leads to improvement in parenting skills (non-offending parent) build skills and coping strategies to deal with the situation. It has also been shown to reduce caregiver distress and burden.[58]

In those cases where the trauma occurred in developmental stages of life, giving emphasis to child-parent dyadic where joint sessions are conducted with child-parent and parent's availability is promoted during the therapy has been shown to be useful.[59] Parents can be included within TF-CBTprogram[59] or other psychotherapies could be given that focusses on this dyadic such as child-parent psychotherapy (CPP). CPP is a psychotherapy focused on improving maternal responsiveness towards child's need and to build child's trust in parent's ability to protect them.[17] This therapy is based on attachment system of child.[17] Lieberman et al in 2005 found that CPP in preschool children (ages 3-5) helps reduce PTSD symptoms in both child and parent.[17]

In cases where resources are few or when trauma is as a consequence of a disaster, administering TF-CBT in group format may be a good option.[60] TF-CBT in group has added advantage of immediately getting enrolled in the therapy,[60] help reduce stigmatization and feelings of shame[60] besides being cost-effective and a good source to train future therapists.[60] The various components of psychotherapy could be added or deleted depending on the sensitiveness and the type of trauma involved.[59] Although TF-CBT is the considered first line therapy for PTSD, it has been shown that even after TF-CBT treatment about 16-40% children continue to meet diagnosis of PTSD.[61]

Other therapies that have been shown to be beneficial are play therapy[62] and Meditation-relaxation Therapy.[63] Man-made or natural disaster induced trauma can also be helped by Trauma and grief component therapy that has been shown to resolve grief.[64]

D) Eye Movement Desensitization and Reprocessing (EMDR): EMDR is a therapy build by Shapiro based on adaptive information processing model.[65] i.e., traumatic events disturb the normal information processing system[65] EMDR is thought to trigger normal information consolidation system and transform dysfunctional memory network to adaptive one.[66] It has been shown that EMDR is useful in reducing PTSD symptoms due to single trauma event such as hurricane.[67] In a study using high density electroencephalography to measure the effect of EMDR in children with early maltreatment, concluded that EMDR helps decrease the symptoms by enhancing high-order cognitive processing.[68]

Verardo[69] adapted EMDR therapy to administer it in children. This adapted EMDR consisted of same 8 stages as the original one.[70] In a randomized, open-label outpatient study comparing TF-CBT vs EMDR in children aged 8-18 year found both treatments to be effective without any significant difference.[71] However, EMDR requires less number of sessions in comparison to TF-CBT.[72] Much work needs to be done to determine the effectiveness of various therapies in children with PTSD since as of now no one therapy has been shown to be truly more effective than other.[73]

E) Social support: Social support is a protective factor for PTSD.[74] Family counselling may be necessary so that parents may be sensitive to the needs of their PTSD child and address the needs of their child.[75] In cases when parents themselves have been witness of violence such as war, it is crucial to provide support and parents[76] as it has been shown that parental distress can exacerbate symptoms of stress in children.[77] Intimate partner violence in mothers has been shown to have detrimental effect on socioeconomically problems in their 1 year old.[78] Hence, it may be essential to devise an individualized treatment plan such as child-parent psychotherapy for mother to help overcome stressful situations which is detrimental to their child.[17]

G) School based intervention programs:

Comprehensive evaluation using screening instruments in public schools can help identify PTSD cases.[79] Teachers may be given training on the signs and symptoms of PTSD, to deal with it sensitively and refer to appropriate mental health services.[80] It has been shown that teacher-mediated intervention program hastens recovery from PTSD symptoms and helps initiate grief process.[81] School based intervention program has been shown to reduce post-traumatic symptoms in elementary and middle school children exposed to traumatic events such as tsunami[82] and terrorism threats.[83] Bergen and Gelkopf in 2009 suggested 2-stage approach to help children deal with PTSD. Stage 1 consisting of universal intervention and stage 2 intervention is specific depending on the symptomatology.[82] School based intervention programs would also counteract the issue of adherence to psychotherapy treatment as it has been shown that those receiving psychotherapy management at school have high adherence rate which may be due to better accessibility.[84]

Children who had been abused should be encouraged for further education as it has been shown that education level helps victims utilize more resources , knowledge and insight to help themselves that ultimately leads to reduction of PTSD symptoms.[74]

Table 5. Sequelae

Developmental deficits - Early traumatic experiences renders a child unable to properly recognize, express and regulate emotions[85] i.e. they misinterpret all emotions as threatening or malicious.[86] Intimate partner violence suffered by mothers of infants have shown to increase difficult infant temperament at the age of 1 year,[87] externalizing and internalizing symptoms,[88] problems in affect regulation.[89] It has been shown that female survivors of childhood abuse develop fearful or avoidant attachment style.[74]

Physical morbidity - chronic musculoskeletal pain, hypertension, hyperlipidemia, obesity and cardiovascular disease.[90] In cases of female child hood sexual victims who were abused by multiple times by multiple perpetrators, the is an increase in use of health care especially for gynecological/gastrointestinal problems.[91]

Mental morbidity - anxiety, depression[90] including major depression,[92] substance use disorder,[92] sleep disturbances[93] and low self-esteem.[94]

Socio-economical morbidity - In cases of child sexual abuse, this may also adversely affect future education and income.[96] The victims of childhood abuse might also later on develop fearful or avoidance attachment style which may affect them to develop trust in their future relations.[74]

H) Pharmacotherapy

Only few studies till date have been done to assess the benefit of using medications to help PTSD symptoms in children.

Antidepressants: SSRIs such as Sertraline (50-200 mg/d)[96] and citalopram (20-40 mg/d)[97] have been shown to improve PTSD symptoms in pediatric patients.

Antiadrenergic Agents: Noradrenergic system has been found to be hyperactive in in pediatric population after sexual abuse[98] and vehicular accident.[99] This led to use of anti-adrenergic drugs in treatment of PTSD pediatric patients. Guanfacine XR (1-4 mg/d)has been shown to reduce avoidance, hyper arousal symptoms[100] and nightmares.[101] Clonidine (0.05 – 0.1 mg/d)has been shown to reduce reenactment symptoms in preschool children.[102] Few case reports support the use of Prazocin(1 mg)[103] and Propranolol (2.5 mg/kg/d).[104]

Second Generation Anti-psychotic: Few studies and case reports have shown that second-generation antipsychotics, risperidone (0.5-1 mg)[105,106] and quetiapine (50-200 mg/d)[107] to be effective in reducing symptoms of PTSD.

Ketamine

There is a case report of a child with resistant to multiple behavioral and pharmacological treatments of PTSDwho achieved remission for 8-13 days after intravenous ketamine (10 mg) treatment.[108]

Conclusion

PTSD is not an uncommon pediatric disorder which can be very damaging for children. It is essential to correctly diagnose this disorder especially in pre-school children and promptly refer them for management. It is imperative to assess PTSD signs and symptoms directly from the child and not to over rely on parents or caregivers or on resilience of children. More research needs to be done in order to devise an appropriate screening scale that could be easily implemented by physicians. Since PTSD can be caused by various traumas and the resulting symptoms depend on the types, duration, intensity and developmental age of child, it is essential to provide individualized care to children. Psychotherapy particularly TF-CBT is considered

the main stay of treatment. Various components of TF-CBT can be added, deleted or extended depending on the need of the child. Other modalities that have been shown to be effective are Eye Movement Desensitization and Reprocessing, social support and school based interventions. There is currently not enough studies done to suggest the use of medications to manage PTSD in children. Thus, there is a need for more clinical trials that would help design a standardized treatment for these children.

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Original Article

Child's Gender and Parenting Styles

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ABSTRACT

Introduction: *Parenting styles signifies the ways the parents raise their children. There are number of factors affecting the parenting styles and child's gender is one of them. Studies suggest that there are developmental differences in both boys and girls. Research also suggests that parents tend to raise their sons and daughters based on gender role. These differences may lead variation in parenting styles of both parents on the basis of child's gender.* ***Objective:*** *The purpose of the present study was to explore the parenting styles of fathers and mothers on the basis of child's gender.* ***Method:*** *The data was collected from 100 fathers and 100 mothers. To assess the parenting styles the parents were asked to fill up the PSDQ (Parenting Style and Dimension Questionnaire - short form) by Robinson, et al (2001).* ***Results:*** *Independent sample t- test was used to analyse the data. The results indicated that there was significant difference in father's parenting style between sons and daughters. It was also found that there was significant difference in mother's authoritative parenting style between sons and daughters. But no significant difference was seen in mother's authoritarian parenting style between sons and daughters.* ***Conclusion:*** *There is a shift in parenting style of fathers towards their children. Daughters experienced more positive parenting from both the parents as compared to sons.*

Key words: *Adolescents, Gender role, Parenting styles, Parental role*

Introduction

Darling and Steinberg (1993) defined parenting styles as "constellation of attitudes toward the child that are communicated to the child and that, taken together, create an emotional climate in which the parent's behaviours are expressed."[1] In 1960s, the famous psychologist Diana Baumrind gave the concept of parenting styles.[2] She came up with the three major parenting styles: authoritarian parenting style, authoritative parenting style and permissive parenting style. According to her, parents high on authoritarian parenting styles tend to be over strict, expect children to obey the commands without fail and engage in physical punishment. The parents high on authoritative parenting styles are democratic in nature, high on warmth and nurturance. The permissive parents believe giving full freedom and love to the children but without enforcing any rules or boundaries.

Parenting styles are influenced by the number of factors. Belsky (1984) developed the ecological determinant of parenting behaviour model. This model identified three sources of influence on parenting "(a) personal psychological resources of parents, (b) contextual sources of stress and supports, and (c) characteristics of the child."[3] In the current study the focus is on how the child's characteristics especially gender determine the parenting style of the parents. Studies show that there are obvious difference between boys and girls and that may lead to differences in parenting. According to Alter girls tend to excel in verbal skills then boys. They tend to comply with the verbal instructions of parents if it is rational in tone. On the other hand, the boys are more likely to ignore the verbal instructions of the parents and more focussed

on actions.[4] Research suggested that both boys and girls face different issues in life. So, the parenting is modified according to those issues. For example, parenting of sons is much harder when it comes to discipline and physical safety. Whereas, parenting of daughters is tough when it comes to self-esteem issues.[5]According to Leaper, studies show that girls need more emotional support and boys need more independence from parents. Therefore girls need more parental acceptance and boys need more parental autonomy granting.[6]

There are different theoretical evidences that support gender differences in parenting. Chodrow (1978) presented a psychoanalytical view about the gender differences in parenting. According to this theory, mother and daughter are of same sex therefore the daughter's identification with mother is much stronger then sons.[7] Block (1976) based her work on reciprocal role theory given by Johnson (1963, 1975) and suggested that the father demonstrated greater differential treatment between sons and daughters than the mothers. Thus, father promoted greater traditional gendered typed behaviour in sons and daughters, for example sons are encouraged to be independent in their behaviour and daughters to be more dependent.[8]According to Bem's Gender Schema theory, males and females act according to the appropriate learned cultural definition of gender. Parents expect that the sons would take up the role of main bread earner and daughters would perform role of caregiving. Therefore, mothers and fathers may encourage different behaviours in their sons and daughters in accordance to their schema of gender.[9]

Gender role theory recommends that the traditional father's role is of primary bread earner and mother's role is primary care giver and housekeeper.[10] These fathers were acting as main disciplinarian and thus demonstrated authoritarian parenting style,[11] whereas mother considered being more nurturing and demonstrated authoritative parenting style.[12] Fathers usually spent more time with boys then with girls as they believed that sons need father more as a role model then do the daughters.[13] Steinberg (1987) stated that mothers and daughters share more powerful and deep relationship then the daughters and fathers.[14]

Due to increase in urbanisation and encouragement given to women's rights and education this trend is changing and many women are entering the workforce.[15] The rise of maternal employment has increased the father's involvement in the household chores and child care.[16] Previous studies have mainly focussed on mother and children relationship but as the trends are changing, its important to study father's relationship with the children. It was also seen that in previous studies mothers were themselves providing the information about the role of father, which could be biased.[8] Therefore, in the present study information is collected from both mother and father.

It was also observed that previous researchers have mainly focussed on studying the gender differences in parenting among the parents of infants and young children and only few studies have focussed on adolescents.[13]Some of the previous researchers pointed that differential treatment of sons and daughters decrease with age of the children.[12] Whereas other studies pointed that these gender differences in parenting decrease with age especially in areas like discipline and gender type activities.[12] So in the present the research the focus is on the differential gendered parenting during adolescent stage. It is an attempt to find the answer to these contradictions.

Based on the above studies following hypothesis was formed for the current study:

I) There will be significant difference of father and mother parenting style between son and daughter.

Method

Participants

A total of 100 early adolescents were taken from different schools of Delhi/NCR. The sample consists of 49 boys and 51 girls belonging to age group of 12 to 14 years with mean age of 12.91 years. Both the mother and father of the students were contacted. Total 100 fathers and 100 mothers were included with mean age of father as 42.75 years and mean age of mother as 39.62 years.

Tool

Parenting style: to measure the parenting style Parenting Style and Dimension Questionnaire – short version (PSDQ – short version) by Robinson, et al[17] was used. The scale consists of 32 items with 15 items for authoritative parenting style, 12 items for

authoritarian parenting style and 5 items for permissive parenting style. Each style has dimensions. Connection dimension, regulation dimension and autonomy granting dimensions belong to authoritative parenting style. Physical coercion dimension, verbal hostility dimension and non-reasoning / punitive dimension fit in with authoritarian parenting styles. Permissive parenting style consists of indulgent dimension. The participants need to give ratings from 1 (never) to 5 (always). The Cronbach Alpha value for the father and mother forms were .68 and .66 respectively. The Cronbach Alpha values for authoritative parenting style, authoritarian parenting style and permissive parenting style for father and mother forms were .77, .80, .55 and .79, .75, .43 respectively. Due to low Cronbach alpha value of permissive parenting style sub scale it was removed from the present study.

Procedure

After taking permission from school authorities the parents were called to participate in the research. The participants were introduced to the purpose of the study. They were assured regarding the confidentiality and the anonymity of the results. After taking the consent, Parenting Style and Dimension Questionnaire – short version (PSDQ – short version) were given to both father and mother separately. They were instructed to fill the questionnaire appropriately and not to leave any question unanswered. After the collection of the data, it was subjected to statistical analysis

Results

Gender difference in the parenting styles were examined using independent sample t-test. The mean and standard deviation for father's authoritative parenting style in boys came to be 4.04 and 0.46 and for girls 4.32 and 0.38 respectively. The t-value was found to be significant at 0.05 level (t (98) =3.20, $p < 0.05$). The mean and standard deviation for father's authoritarian parenting styles for boys came to be 2.09 and 0.71 and for girls 1.8 and 0.49 respectively. The t-value was found to be significant at 0.05 level (t (98) = 2.19, $p < 0.05$). Results indicated that there was significant difference in fathers parenting styles between sons and daughters.

When analysing the data for mother's parenting style, it was found that mean and standard deviation for boys and girls on authoritative parenting style were 4.17, 0.46 and 4.44, 0.30 respectively. The t-value was found to be significant at 0.50 level (t (98) = 3.49, $p < 0.05$). The mean and standard deviation for boys and girls on mother's authoritarian parenting style came to be 2.22, 0.57 and 2.07, 0.65 respectively. The t value was observed to be non – significant. Therefore results revealed that there was significant difference in mother's authoritative parenting style between sons and daughters. But no significant difference was seen in mother's authoritarian parenting style between sons and daughters.

Discussion

Results indicated that fathers used authoritative parenting style for girls more than boys and authoritarian parenting style for boys more than girls. This shift in parenting styles of fathers for girls signifies that fathers are becoming more involved, responsive and caring towards the adolescent girls.[18] Whereas, the research suggest that parenting style of fathers is harsher for adolescent boys than girls.[19]

Now the trend is changing which is reflecting through the results. Earlier researches suggested that fathers rarely interacted with children at home. Their interaction was mediated through their wives.[20] But the present finding contradicts with the previous researches and points that father showed more connection and warmth with girls than boys. Study conducted by Rai et al supports the findings that father expressed more warmth for girls than boys.[21] A study conducted by Bumpus et al (2001) revealed that fathers granted autonomy more to girls as compare to boys. The reasons pointed by these researchers were that the girls mature early then boys, this helps them to enter the stage of adolescence in healthier way. Also the boys tend to have higher behaviour problems than girls which make the father cautious of granting freedom to the boys.[22] Studies also pointed that due to this reason father used more physical punishments for boys than girls.[23] These findings provide support to the current results. These research findings point that father's role is changing and they are becoming more involved in their daughter's life.

Further research also suggests that the fathers were found to be interacting more with older children

and preferably with sons rather infants and daughters.[20]

The results in the present study was consistent with the previous findings and suggests that the mothers used authoritative parenting styles with daughters more than sons.[12] This means that mothers adopted more nurturing, caring and rational style with their daughters as compared to the sons. Therefore, daughters experienced more positive parenting from mothers as compared to sons.[24]

It was also observed by the several researchers that mothers tend to spend more time with their daughters and expressed more warmth and connection with them as compared to the sons.[25] Previous studies have also shown that mothers used to put rigid rules regarding socialization of their daughters and sons were given more leverage in decision making.[26] But these findings contradict the current result in the study as the mothers were found to be more autonomy granting to their daughters than sons. This suggests that mothers and daughters relationship now seemed to be based on friendship rather than controlling.

Previous studies have also revealed that fathers generally express more differential parenting behaviours for sons and daughters as compared to mothers.[27] Grace (2014) suggested that the mother would express same concern and discipline for her sons and daughters. For her, child's personality will determine the parenting.[28] These findings support the result in the current study as it was seen that mothers showed less differential treatment for sons and daughters.

To conclude we could say that traditionally it was seen that the father's preferred style of parenting involved more strictness and harshness. Also they were more involved with their sons rather than their daughters. But the findings in the current study suggests a modification in the parenting style of father as it is now based on more care and concern for daughters. Current results also points towards raising the daughters in a more positive way by both the parents. Earlier the daughters were seen as burden in India but this thinking is appeared to be changing. Indian government has launched several schemes also in order to promote the girl child, for example Sukanya Samriddhi Scheme and Sabla or Rajiv Gandhi Scheme for Empowerment of Adolescent Girls. These changes could also be reflected in the way girls like Sania Mirja and Saina Nehwal are being promoted by their families. They are given equal opportunities to grow and rise in their career.

The data obtained in the present study is based on self-reports only. The findings could be strengthened by observational data. Researchers can further see the impact of these differentiated parenting styles on sons and daughters' well-being and development. Nowadays the concept of gender neutral parenting is flourishing. Therefore, future researchers can explore the trends of gender neutral parenting in the world.

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Original Article

Association of Cardiovascular Disease risk variables with Depression in Urban population of Delhi, India

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ABSTRACT

Background: *The association between cardiovascular disease risk factors and depression is not extensively studied. So considering the above, the aim of the present study was to find whether the cardiovascular disease risk variables differ between the depressed and non depressed individuals and further to find the association between cardiovascular diseases risk variables with depression.* ***Method:*** *A cross sectional study of Sunni Muslims residing in the walled city of Delhi was conducted using a household survey. A total of 406 Sunni Muslims (125 males and 281 females) between 35 and 65 years of age were included using random sampling method.* ***Results:*** *In the present study, among females the mean value of serum cholesterol, serum triglycerides, high-density lipoprotein, low density lipoprotein, Very-low-density lipoprotein, non-HDL cholesterol, Fasting blood glucose, homocysteine and vitamin B_{12} were found to be higher among individual with depression as compared to the individuals without depression while among males the mean value of serum triglycerides, high-density lipoprotein, Very-low-density lipoprotein, Fasting blood glucose, Homocysteine, Folate and Vitamin-B_{12} were found to be higher among individual with depression as compared to the individuals without depression. Further logistic regression analysis showed that females had significant increase risk of developing depression as compared to males. Lower middle and upper lower socioeconomic status and cardiovascular disease risk factors (hypercholesterolemia, hypertriglyceridemia and High VLDL) increase the risk of developing depression.* ***Conclusion:*** *Future research with larger sample sizes will help us to fully understand the association between depression and cardiovascular disease risk variables.*

Keywords: *Depression, Cardiovascular, risk, variables.*

Introdution

Cardiovascular disease (CVD) is a leading cause of death around the globe[1] and it is expected to remain as such for the foreseable future.[2] Globally, between 1993 and 2013, the number of deaths due to CVDs increased from 12.3 to 17.3 million. There was 97% increase in the mortality due to cardiovascular disease in India between 1990 and 2015.[3] The leading contributors also include depression and it is estimated that if epidemiological and demographic transition continued, then the burden of depression will increased 5% of the overall burden of disease.[4,5] World Health Organization's (WHO) estimated that the cardiovascular disease (CVD) and depression will be the leading cause of disability-adjusted life years till the year 2020.[6] The association between cardiovascular disease risk factors and depression is complex and contentious issue. Some studies[7,8] showed the association between depression and lipid variables furthermore, these studies[9-11] reported the fact that individual with

depression had dyslipidemia which increase the risk of CVDs on the other hand some studies did not find any association between the lipid variables and depression.[12,13] Some studies shows the association between depression and blood pressure[14-16] while on the other hand some studies failed to show association between depression and blood pressure.[17,18] The association between novel biomarkers of CVDs such as folate, vitamin B_{12}, hyperhomocysteinemia and depression is debatable.[19] According to some studies, approximately 20-50 percent of individuals with depression had higher homocysteine level.[20,21] Considerable research showed the association between depression and deficiencies of folate/ vitamin B_{12} and homocysteine 22-25, since folate and vitamin B_{12} are essential for the proper functioning of central nervous system and deficiency of vitamin B_{12} and folate is associated with memory loss, fatigue, irritability and depression. Vitamin B_{12} and folate are also required for the metabolism of homocysteine, which can futher linked with neurotransmitters.[26] The deficiency of folate and vitamin B_{12} can cause hyperhomocysteinemia and further lead to depression.[27] However some studies on the other hand showed no association of deficiency of folate/vitamin B_{12}, homocysteine and depression.[28,29] Furthermore, community based meta analysis showed the association between depression and obesity (BMI) or abdominal obesity (waist- hip ratio).[30] Study further elaborated the mechanism which link depression with obesity, dyslipedimia and blood pressure was dyregulation of hypothalamic pituitary adrenal (HPA) axis 31 or increase sympathetic autonomic nervous system (ANS) activity.[18] decrease parasympathetic which can cause inflammation. Certainly, some studies also found no association between obesity and depression. 32-34 Present study was conducted with the intention to address this knowledge gap, therefore the aim of the present study was to find whether the cardiovascular disease risk variables differ between the depressed and non depressed individuals and further to find the association between cardiovascular diseases risk variables with depression

Material and Methods

A cross sectional study is conducted among Sunni Muslim of Delhi using random sampling method. Delhi was chosen as study area because it is very populated state of India, and comprising of 9.879 million people, it also has very high level of urbanization (97.5%). In urban areas, presence of depression was found more prevalent as compared to rural areas.[35,36] Data was collected from 406 individuals in age group of 35-65 years, with the help of trained research fellow. The written consent was taken from studied individuals and study was also approved by ethnical committee of Department of Anthropology, University of Delhi. Information regarding demography and medical history was collected through interview schedule. Kuppuswamy's scale with modifications was used to assess the socio- economic status of individuals.[37] Anthropometric measurement was taken on each individual using standard protocol[38] while blood pressure was taken according to American Heart Association, 1981.[39] The cut off values provide by World Health Organization, 2000[40] was used for obesity (BMI) $\geq$ 25 kg/m^2 and abdominal obesity (WC $\geq$ 90 cm males, $\geq$ 80 females), Cut off values was used for waist circumference, WC $\geq$ 90 cm males, $\geq$ 80 females[41] and WHtR of greater than 0.50 was taken as to define risk category for both males and females.[42] The cut off value used for systolic blood pressure(SBP) $\geq$ 140 mmHg and for diastolic blood pressure (DBP) $\geq$ 90 (Joint National Committee, 2003[43]). The presence of depression was estimated with the help of Patient Health Questionnaire-9 (PHQ-9). PHQ-9 is a screening questionnaires widely used in research to screen the individuals for depression[44] and its validity has been established in Indian setting.[45] In the present study PHQ 9 questionnaire was filled by one of the author. The cut off value of above 10 showed the presence of depression while the value below 10 showed absence of depression.[46,47] For assessment of biomarker, each individual was asked for 12 hours of fasting and blood sample was drawn with the help of trained individual. The cut off value for the lipid variables were used according to NCEP, 2001[48] criteria while the cut of value for homocysteine (HCY), folate (Fol) and vitamin B_{12} (Vit-B_{12}) was used as per Yakub et al., 2012.[49]

Statistical Analysis

The data was statistically analysed using SPSS version 17. Estimates are expressed as mean ± standard deviation and median (due to the skewness of the data). To compare the mean values of the variables, a test of significance (t-test) was used

and otherwise Mann-Whitney test was performed. Binary logistic regression was performed to determine the risk of depression (dependent variable) and cardiovascular disease risk lipid variables as the independent variables.

Results

In the present study among females the mean value of Serum Cholesterol (TC), Serum triglyceride (TG), high-density lipoprotein (HDL-c), low-density lipoprotein (LDL), Very-low-density lipoprotein (VLDL), non-HDL cholesterol, Fasting blood glucose (FBG) Homocysteine (HCY) and vitamin-

Table-1: Cardiovascular risk variables distribution among the depressed and non depressed females

	Presence of depression PHQ9 ≥ 10 (N=188)	Absence of depression PHQ9 < 10 (N=93)	P value
Age (years)	45.53 ± 8.77	45.63 ± 8.99	0.42
Height (cm)	154.01 ± 7.64	154.74 ± 6.50	0.42
Weight (kg)	67.23 ± 12.85	69.98 ± 11.32	0.08
Body Mass Index(kg/m^2)	28.37 ± 5.26	29.20 ± 4.23	0.18
Waist circumference (cm)	96.95 ± 9.60	98.83 ± 10.73	0.13
Hip circumference (cm)	107.41 ± 10.37	109.61 ± 10.46	0.09
Waist hip ratio	0.90 ± .05	0.90 ± .06	0.80
Waist height ratio	0.63 ± .06	0.63 ± .07	0.58
Systolic blood pressure (mmHg)	133.37 ± 16.21	136.24 ± 16.98	0.17
Diastolic blood pressure (mmHg)	83.88 ± 9.11	85.75 ± 8.86	0.10
Serum Cholesterol (mg/dl)	212.20 ± 41.49	196.78 ± 41.42	0.00
Serum triglyceride (mg/dl)	169.70 ± 61.19	168.43 ± 75.67	0.88
HDL-c (mg/dl)	47.73 ± 16.06	42.76 ± 14.24	0.01
LDL-c (mg/dl)	128.73 ± 32.28	121.13 ± 33.51	0.06
VLDL-c (mg/dl)	34.04 ± 12.11	33.96 ± 15.03	0.96
Non- HDL-c (mg/dl)	164.47 ± 35.34	154.02 ± 36.50	0.02
FBG (mg/dl)	112.53 ± 54.19	104.29 ± 39.08	0.19
Homocysteine (µmol/L)	17.72 ± 9.63	16.61 ± 8.07	0.33
Vitamin B_{12} (pg/mL)	386 ± 186.97	360.39 ± 186.36	0.27
Folate *(ng/mL)	15.05*	18.40*	0.62

*Median level reported due to skewness of data (p <.05)

Table 2: Cardiovascular risk variables distribution among the depressed and non depressed males

	Presence of depression PHQ9 ≥ 10 (N=54)	Absence of depression PHQ9 < 10 (N=71)	P value
Age (years)	49.76 ± 9.97	51.07 ± 9.11	0.44
Height (cm)	165.20 ± 6.23	164.96 ± 9.61	0.87
Weight (kg)	74.22 ± 11.54	76.23 ± 13.22	0.37
Body Mass Index(kg/m2)	27.27 ± 4.56	28.23 ± 6.15	0.33
Waist circumference (cm)	99.80 ± 11.22	103.27 ± 11.72	0.09
Hip circumference (cm)	105.46 ± 11.67	106.93 ± 10.15	0.45
Waist hip ratio	0.93 ± 0.06	0.96 ± .04	0.00
Waist height ratio	0.60 ± 0.07	0.62 ± .09	0.12
Systolic blood pressure (mm Hg)	137.8 ± 16.77	137.90 ± 17.13	0.98
Diastolic blood pressure(mmHg)	86.17 ± 11.32	86.41 ± 11.86	0.90
Serum Cholesterol(mg/dl)	209.27 ± 41.27	214.63 ± 44.83	0.49
Serum triglyceride(mg/dl)	197.37 ± 114.67	182.99 ± 68.63	0.38
HDL-c(mg/dl)	49.31 ± 14.60	47.07 ± 16.21	0.49
LDL-c(mg/dl)	122.02 ± 33.74	126.80 ± 35.83	0.45
VLDL -c(mg/dl)	116.58 ± 59.32	108.70 ± 35.97	0.65
Non- HDL-c(mg/dl)	159.94 ± 36.33	167.56 ± 40.11	0.27
Fasting blood glucose (mg/dl)	116.58 ± 59.32	108.70 ± 35.97	0.36
Homocysteine (µmol/L)	24.70 ± 13.41	20.23 ± 11.68	0.04
Vitamin B12 (pg/mL)	367.02 ± 177.95	346.38 ± 177.97	0.52
Folate *(ng/mL)	17.65*	14.23*	0.86

* Median level due to skewness of data

B_{12} were found to be higher among individual with depression as compared to the individuals without depression and difference was found to be statistically significant ($p < .05$) only for TC and non- HDL. These cardiovascular risk variables showed their role in depression.

In the present study among males the mean value of TG, HDL-c, VLDL, FBG, HCY, Fol and Vit-B_{12} were found to be higher among individual with depression as compared to the individuals without depression and difference was found to be statistically significant ($p < .05$) only for HCY. These cardiovascular risk variables showed their role in depression.

depression. After adjusting possible confounders odds ratio showed that females had 1.73 fold significant risks for developing depression. Upper lower and lower middle socioeconomic showed 3.09 and 2.29 fold significant risk for depression while the biochemical variables, hypercholesterolemia and hypertriglyceridemia and high VLDL had 1.62, 1.57 and 1.73 fold significant risks for depression.

Disclusions

Both crude and adjusted odds ratio showed that females had 2.65 fold and 1.73 fold significant increase risk of developing depression as compared to males. Present study shows the agreements with

Table 3: Overall distribution of cardiovascular risk variables distribution among the depressed and non depressed individuals

	Presence of depression PHQ9 ≥ 10 (N=242)	Absence of depression PHQ9 < 10 (N=164)	P value
Age (years)	47.25 ± 9.13	47.99 ± 9.41	0.43
Height (cm)	156.50 ± 8.69	159.16 ± 9.45	0.00
Weight (kg)	68.79 ± 12.88	72.69 ± 12.53	0.00
Body Mass Index (kg/m2)	28.12 ± 5.12	28.78 ± 5.15	0.20
Waist Circumference (cm)	97.58 ± 10.03	100.75 ± 11.35	0.00
Hip circumference (cm)	106.98 ± 10.68	108.45 ± 10.38	0.16
Waist- Hip ratio	0.91 ± 0.06	0.92 ± 0.06	0.00
Waist – Height ratio	0.62 ± 0.07	0.63 ± 0.08	0.20
Systolic Blood Pressure	134.36 ± 16.40	136.96 ± 17.01	0.12
Diastolic Blood Pressure	84.41 ± 9.67	86.04 ± 10.24	0.10
Serum Cholesterol (mg/dl)	211.54 ± 41.37	204.51 ± 43.70	0.10
Serum triglyceride (mg/dl)	175.88 ± 77.01	174.73 ± 72.85	0.88
HDL Cholesterol (mg/dl)	48.08 ± 15.73	44.63 ± 15.23	0.02
LDL Cholesterol (mg/dl)	127.23 ± 32.66	123.59 ± 34.54	0.28
VLDL Cholesterol (mg/dl)	34.72 ± 12.53	34.83 ± 14.59	0.93
Non- HDL cholesterol (mg/dl)	159.88 ± 38.71	163.46 ± 35.53	0.33
Fasting Blood Sugar (mg/dl)	113.43 ± 55.28	106.20 ± 37.720	0.14
Homocystein	19.28 ± 10.95	18.18 ± 9.93	0.30
Vitamin B_{12}	382.33 ± 184.77	354.13 ± 182.22	0.13
Folate	15.90*	16.70*	0.68

* Median level due to skewness of data

In the above table the mean value of TC, TG, HDL-c, LDL, FBG, HCY and Vit-B_{12} were found to be higher among individual with depression as compared to the individuals without depression and difference was not found to be statistically significant ($p > .05$).

Above table showed the fact that females had 2.65 fold significant increase risk of developing depression, upper lower and lower middle had 4.77 and 3.08 fold significant increase risk for depression. For biochemical, hypercholesterolemia and high VLDL had 1.52 and 1.59 fold significant risk of

other studies[50-55] which highlighted the point that females are more vulnerable for depression as compared to male. There are several factors responsible for the higher depression among females from biological to social pressure. Possible biological factor of depression among females is due to hormonal changes, menopausal symptoms and vasomotor instability increase depression[56] and apart from biological problem present study females reported some social problems issues due to which they feel depression like persistence money problem, marital problem, younger children future insecurities,

Table 4: Binary logistic regression analysis showing effect of depression on the entire different cardiovascular variables

Variables	Crude[1]	p value	Adjusted[2]	p value
Sex				
Female	2.65 (1.72-4.09)	0.00	1.73 (1.05-2.84	0.03
Male	1.0 (Reference)		1.0 (Reference)	
Upper middle	1.37 (0.66-2.80)	0.39	1.23 (0.59-2.56)	0.58
Lower middle	3.08 (1.70-5.59)	0.00	2.29 (1.21-4.33)	0.01
Upper lower	4.77 (1.82-12.48)	0.00	3.09 (1.11-8.55)	0.03
Lower	1.0 (Reference)		1.0 (Reference)	
hypercholesterolemia (mg/dl)	1.52 (1.02-2.27)	0.03	1.62 (1.06-2.48)	0.02
hypertriglyceridemia (mg/dl)	1.40 (0.93-2.12)	0.10	1.57 (1.01-2.42)	0.04
Low HDL-c (mg/dl)	0.57 (0.38-0.86)	0.00	0.48 (0.30-0.74)	0.00
High Non- HDL-c (mg/dl)	1.27 (0.76-2.12)	0.35	1.36 (0.79-2.33)	0.26
High LDL-c (mg/dl)	1.00 (0.99-1.00)	0.28	1.41 (0.93-2.15)	0.10
High VLDL-c (mg/dl)	1.59 (1.05-2.40)	0.02	1.73 (1.12-2.68)	0.01
High FBG (mg/dl)	1.22 (0.78-1.90)	0.36	1.31 (0.81-2.10)	0.25
Body Mass Index (Overweight)	1.80 (0.89-3.67)	0.10	1.76 (0.83-3.71)	0.13
Body Mass Index (Obesity)	1.41 (0.76-2.61)	0.26	1.52 (0.80-2.91)	0.19
Waist Circumference (Regional Obesity)	1.47 (0.62-3.49)	0.38	0.55 (0.22-1.38)	0.20
Waist- Hip ratio (Regional Obesity)	1.19 (0.49-2.92)	0.69	0.58 (0.22-1.49)	0.26
Waist – Height ratio (Regional Obesity)	1.01 (0.35-2.91)	0.97	0.82 (0.27-2.48)	0.72
Hypertension (SBP)	1.02 (0.68-1.53)	0.91	1.00 (0.65-1.56)	0.96
Hypertension (DBP)	1.01 (0.67-1.51)	0.94	1.00 (0.65-1.54)	0.96
Hyperhomocysteinemia	0.95 (0.64-1.42)	0.82	1.16 (0.76-1.77)	0.47
Low Vitamin B_{12} (pg/mL)	1.10 (0.53-2.28)	0.78	1.09 (0.50-2.34)	0.82
Low Folate (ng/mL)	1.41 (0.66-3.02)	0.36	0.78 (0.35-1.73)	0.55

[1] Value for OR (95% CI) from logistic regression,
[2] Value for OR (95% CI) from logistic regression adjusted various confounder (age, gender, socio economic)

joint family issues, and daughter marriage problem. According to National Institute of Mental Health[57-59] depression is more common among females as compared to males and one of every 8 females may experience depression symptoms. Further upper lower and lower middle socio-economic status showed 4.77 and 3.08 fold significant increase risk of depression. Since socioeconomic status measures the individual's education, income and occupation and lower socioeconomic status individuals had lower education, less income and higher job stress and less availability of good medical benefits[60] and such environment may cause psychosocial disturbance and increase the chance of depression.[61] Present study showed the agreement with other studies which reported the fact that presence of depression is more common among individuals from lower socioeconomic background[62,] belonging to Muslims community[63-66] and residing in urban areas.[67] As far as the biochemical parameter is concerned, both crude and adjusted odds ratio of hypercholesterolemia showed 1.52 and 1.62 fold significant increase risk of depression. The studies support the finding of Nakao & Yano 68 who also reported the presence of depression in hypercholesterolemic individuals. Crude and adjusted odd ratio of very low density lipoproteins showed 1.59 and 1.73 fold of significant risk for depression while adjusted odds ratio of hypertriglyceridemia increase 1.57 fold risk of depression. Some studies explained the possible mechanism which linked dyslipidemia and depression. Vevera et al[69] and Gupta et al[70] reported that lipid may affect the neuron membrane structure, which further affect neurotransmission. Another possible explanation is as dyslipidemia may cause atherosclerosis in the arteries of human brain which may induce depression.

There are some limitations of the present study; firstly more studies with larger sample size are needed for validation. Another limitation is cross sectional study design which limits our ability to fully explain the outcomes.

Conclusion

The association between cardiovascular disease risk variables and depression is not thoroughly studied.

An understanding of associations could lead to the development of novel methods of intervening upon and preventing CVDs and depression. Present study was an attempt to address this knowledge gap. Future research with larger sample sizes will help us to fully understand the association between depression and cardiovascular disease risk variables.

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Original Article

Depression and Loneliness in Old age: A Study of Delhi and Gurgaon Region

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ABSTRACT

Background: *In general the elderly population is huge and is growing due to advancement of health care facilities and education. These people face numerous changes like physical, psychological and social role changes which challenge their sense of self and their capacity to live happily. Many people experience loneliness and depression at this age which may be attributed to being alone or due to lack of close family relations and reduced connections with people of their cultural origin, results infailure to actively participate in community activities. With advancing in age, it is inevitable that people lose friendship connections and that they find it more difficult to initiate new friendships in new networks.* ***Methodology:*** *The study investigates the level of depression and loneliness in elderly, gender differences in level of depression and loneliness and relationship among loneliness and depression among aged people and relationship between depression and loneliness in elderly. Depression and loneliness were measured by the Beck Depression Inventory and University of California Loneliness Scale (UCLA) respectively. A sample of 60 elderly (60-80 yrs) was taken using purposive sampling. The data was analyzed using t-test and Pearson Correlation Coefficient for statistical analysis.* ***Results:*** *The study revealed that there is a statistically significant relationship between depression and loneliness among aged males and females. Gender difference is present on the measures of depression and loneliness.* ***Conclusion:*** *There is a greater degree of depression and loneliness among elderly women as compared to elderly men.*

Keywords: *Ageing, Loneliness, Depression, UCLA, BDI, Elderly, Old age.*

Introdution

"So often we dwell on the things that seem impossible rather than on things that are possible. So often we are depressed by what remains to be done and forget to be thankful for all that has been done" - Marian Wright Edelman.

Aging is a series of processes that begin with life and continue throughout the life cycle. Ageing can generally be described as the process of growing old and is an intricate part of the life cycle. It represents the closing period in the lifespan, a time when the individual looks back on life, lives on past accomplishments and begins to finish off his life course.[1] Adjusting to the changes that accompany old age requires that an individual is flexible and develops new coping skills to adapt to the changes that are common to this time in their lives.[2]

As an individual advances from infancy to old age he accumulates a wealth of impression, skills and knowledge and develop his own life style. Old age consists of ages nearing or surpassing the average life span of human beings and thus the end of the human life cycle.

Decreasing strength is the general physical change in the elderly. The sociologic issues of ageing

are concerned with work, retirement, social security, health care which as a response can be related to lifelong habits, diet and exercise patterns. Old aged often becomes anxious if they live alone, lack family support, poor income, accommodation and insecurity which may lead to depression.

The elderly population is vulnerable to health problems and the burden of health care is also increasing. Old age is not a disease in itself, but the elderly are prone to long term diseases such as cardiovascular diseases, hypertension, diabetes, respiratory problems and mental health problems. For example, elderly individuals with specific medical conditions (e.g., arthritis, cardiovascular disease, or stroke; 3-5 have been shown to experience elevated levelsof depressive mood. More important, physical and emotional problems are interdependent and can reciprocally influence each other. Although poor health may increase depressive mood6, depression may also contribute to health declines in the elderly.[7] As a consequence, it is important to identify the mechanisms that link physical health threats and associated depressive mood with subsequent declines in older adults' physical health.

Adjustments in old age

As the baby boomer cohort reaches retirement age, the population living in Retirement and nursing homes, away from former homes and neighborhoods and separated from extended families, will continue to increase.[8] Older adults living in facilities for the elderly will have to adjust to a changed living situation, and this adjustment can lead to serious psychosocial problems of loneliness and depression in the absence of positive social networks.

Among the elderly, quantitative or qualitative aspects of social ties have been found to be related to mortality,[9] and well-being.[10] These researchers suggest that having more extensive social ties and interactions reduces the risk of developing activity of daily living (ADL) disability and increases recovery from ADL disability.

Furthermore, friendship can also contribute to an older person's self-worth.

Retirement

Retirement not only means adjusting to reduced finances, loss of status, and power, but also to changed family interrelationship and the overall changes and ageing that coincide with this event. Retirement puts an end of the life long habit of hurriedly preparing to go to one's work place and attending to daylong occupational obligations. Retirements also ends the social contacts that were available at the work spot. Most people who do not find re employment are 'forced to' remain at home with the new leisure handing heavy and inability to find suitable replacement for the loss of work engagement.[11]

Cognitive ability

Accelerated changes in cognition are seen only after the eighth decade on age. Some or the early studies dealt with perception and learning. They showed that perceptual shifts in the elderly were few and were related to cognitive flexibility.[12] Studies on cognitive flexibility showed a decrease with age. Role of personality factor including self-esteem, I – E locus of control, mental health, perception of social supports and physical health (self-rated) were found to be the significant correlates of memory performance.[13-15] The level of memory and cognitive functioning are critical for the daily functioning of the elderly.

Loneliness

Loneliness has been defined in different ways. A common definition is "A state of solitude or being alone". The other definition is "Loneliness is not necessarily about being alone. Instead, "it is the perception of being alone and isolated that matters most" and is "a state of mind". "Inability to find meaning in one's life", "Feeling of negative and unpleasant" and "A subjective, negative feeling related to the deficient social relations" "A feeling of disconnectedness or isolation." etc., are the other ways to define loneliness.

Loneliness may be pathognomonic of depression in old age. It is reported to be more dangerous than smoking;[16] high degree of loneliness precipitates suicidal ideation and para-suicide,[17] Alzheimer's disease, and other dementia and adversely affects the immune and cardio-vascular system.[18] It is a generally accepted opinion that loneliness results in a decline of well-being and has an adverse effect on physical health, possibly through immunologic impairment or neuro-endocrine

changes. Loneliness is thus, among the latent causes of hospitalization and of placement in nursing homes. Till date loneliness is being treated as a symptom of mental health problems; however, for elderly (aged 60 years and above), loneliness has become a disease in itself. There are epidemiological, phenomenological, and etiological reasons to say that.

Indian Scenario

The current Indian demographic scenario is testimony to the fact that the population of the elderly is growing fast, both in terms of proportion and absolute numbers (5.3%-12.5 million in 1951 to 7.6%-92 million in 2011, respectively). In addition to increasing population of elderly, changing living situations (living alone or living with relations and non-relations) are the main demographic breeders of loneliness. Some other factors like widowhood, increasing dependency ratio (10.9% in 1961 to 13.1% in 2001)19 as well as economic dependency (86% rural and 83% urban females and 51% rural and 56% urban males) 20; and solvency are major contributors for developing loneliness. Further, environmental factors like type of family, social network, transportation issues and place of residence,[21] population migrations etc., are also some other significant correlates of loneliness. Women are reported to be more at risk for loneliness and isolation than men. National Sample Survey Organization (NSSO) of India on the condition of aged in 2004 indicated that 1.23 million men and 3.68 million women are living alone and faced loneliness. Another Indian statistics reveal that about 2-3% of elderly men live alone while another 3% live with other relations and non-relations and among elderly females 7-8% live alone and another 6-7% reported to live with other relations or non-relation. This number is increasing day by day.[22]

Loneliness may be categorized into three types according to its causes.

1. *Situational loneliness:* Socio-economic and cultural milieu contributes to situational loneliness. Various environmental factors like unpleasant experiences,[23] discrepancy between the levels of his/her needs and social contacts, and migration of population, inter personal conflicts, accidents, disasters or emptiness syndrome, etc., lead to loneliness in old age. The increased life expectancy and feminization of elderly population is a significant factor in developing situational loneliness in females.
2. *Developmental loneliness:* Every one of us has an innate desire of intimacy or a need to be related to others. This need is essential for our development as a human being. Apart from this need, a higher level of need for individualism also exists which is related to knowing and developing our own real self that requires some solitude too. For optimum development, there should be a balance between the two. When a person is not able to balance these needs properly, it results in loss of meaning from their life which in turn leads to emptiness and loneliness in that person. Personal inadequacies, developmental deficits, significant separations, social marginality, poverty, living arrangements, and physical/psychological disabilities often lead to developmental loneliness.
3. *Internal loneliness:* Being alone does not essentially make a person lonely. It is the perception of being alone which makes the person lonely. People with low self-esteem and less self-worth are seen to feel lonelier than their counterparts. Reasons for this type of loneliness are personality factors, locus of control, mental distress, low self-esteem, feeling of guilt or worthlessness, and poor coping strategies with situations.

For diagnosing loneliness in elderly following measures may be used

- Level of experience of separateness
- Levels of cumulative wear and tear
- Complete physical/mental health status
- Social network
- Frequency and degree of loneliness.

Although loneliness and isolation are connected they are separate concepts. Loneliness is a subjective state with a number of forms. For example, 'social loneliness' is the absence of a social network or a broad group of friends, neighbors and colleagues. While 'emotional loneliness' is the absence of a significant other with whom a close emotional attachment is formed. Loneliness can be a chronic condition which is exacerbated with age or a condition which flares up in later life in response to

life changes such as bereavement. It can be difficult to measure. In contrast, social isolation is an objective state, measurable by the number of contacts a person has. Although the terms are often used interchangeably they do remain distinct from each other. Social isolation often contributes to loneliness, but does not guarantee it.[24]

Older people often feel alienated, neglected and marginalized and helpless. To the extentelderly perceive that others should support them and come to their rescue at the time of theirneed, they feel secure.[25] If there are other people around them, to whom they can go to relate, unburden their vows, seek assistance and support, they feel greatly relieved. Social support has a significant role in making the elderly feel wanted and supported. The number of interacting social contacts orpersons, whom individual can count upon or approach at the time of need, constitutes the social network. When the compared between various age groups, the results show that there were no significant differences in almost all the dimensions of the social support networks structure.[26] In old age, it is not physically being alone, but the feeling of being lonely. Many men and womenin their old age "feel lonely" sometimes even inthe midst of people. They express that they do not have people they can relate themselves to pour out their woes and get emotional support. As person grows older and older they gradually lose their cohorts and peers, the longer they live, the more the loss.

Depression in old age

Depression among the elderly is a common and serious problem (NIH 1992). Depression is a serious condition for people of all ages, but for older people depression is often associated with other co-morbid conditions, such as physical disability,[27, 28] dementia [29] and anxiety,[30, 31] that exacerbate the distress experienced by older people and their care givers. WHO Report on aging and Health reported that in developed countries approximately 1 to 3% of people aged over 65 suffer from severe depression with further 10–15% suffering milder forms of depression. Higher suicidal rates are associated with undiagnosed rates of depression. 25% completed suicides are above 65 years. Suicide rates for depression in men over 65–85 times higher than for younger men. Although the actual levels in developing countries are not known precisely since it requires age and culture relevant measures of depression.[32]

Increased prevalence of depression in older people has been associated with age, female gender, family history of depression, physical illness/disability, life events (recent and long term), change in living patterns, social and interpersonal support, ûnancial and educational status, urbanity, loneliness and personality. Such a long list of associations suggests a multi-factorial etiology of depression in this population. It also implies that many older people may be at risk of becoming depressed. Some of these factors, however, have not consistently been found to predict depression.In addition to losing most of their worldly possessions and social support, they also lose their privacy and their sense of self-worth. They need others to meet their emotional and recreational needs.

Methodology

Objectives

The purpose of this study is to

a) Examine the degree of loneliness and depression in elderly people.
b) Study gender differences with respect to loneliness and depression among elderly people.
c) Study the correlation between loneliness and depression in elderly.

Hypothesis

Ho: There will be no difference in the frequency of depression between elderly women and men.

Ho: There will be no difference in the frequency of loneliness between elderly men and women.

Ho: There will be no correlation between depression and loneliness in the elderly.

Sample

Based on the geographic proximity, feasibility to conduct the study and familiarity with the setting, elderly men and women were selected from areas of Gurgaon, National Capital Region (NCR). The population of the present study comprises the elderly men and women staying with the families in selected

areas of Gurgaon, NCR. A sample is a portion of the population that has been selected to represent the population of interest. Thus it is a subset of a population element. Sample size of the present study consists of 60 elderly people i.e. 30 men and 30 women.

(a) ***Sampling technique:*** Purposive sampling technique was used for tshe purpose of selection of elderly within Gurgaon and NCR. The elderly clients were selected by simple random sampling. This sampling technique permits the researcher to decide purposely to select subjects who are judged to be typical of the population.

(b) ***Sampling criteria:*** The criteria used to define a population for a research project have implication for both the interpretation of the results and generalizability of the findings.

Inclusion criteria

- Elderly people between 60-80 years of age.
- Elderly people, who can read, write and those who can understand English and Hindi.
- Both the sexes (male & female) will be included in this study. Exclusion criteria:
- Elderly who are terminally ill (based on their previous medical records).
- Elderly who are not willing to participate in the study.

Statistical analysis

The statistical analysis was doneusing 't' -Test and Pearson correlation.

Tools Used

The tool used for gathering relevant data was a Beck's Depression Inventory (BDI), University of California Los Angeles Loneliness Scale (UCLA).

(a) Beck depression inventory[33]

The Beck Depression Inventory (BDI) is a 21-item self-report scale measuring supposed manifestations of depression. The internal consistency for the BDI ranges from 0.73 to 0.92, with a mean of 0.86. The BDI demonstrates high internal consistency, with alpha coefficients of 0.86 and 0.81 for psychiatric and non-psychiatric populations, respectively. The scale has a split-half reliability coefficient of 0.93.

(b) The revised UCLA (University of California, Los Angeles) loneliness scale

Revised UCLA scale was used to collect data. This test was devised by Russell, Peplau and Cutrona in 1980. The test is highly reliable with a co-efficient of alpha.[96] The test retest correlation was.[73] It has a high validity coefficient measuring.[79] The score ranges from 20–80. High scores indicate high level of loneliness and vice-versa.[33]

Results

Group Statistics of Depression among elderly people

Beck Depression Inventory

The BDI scores in this study ranged from of 18 to 30 with a mean score of 21.7 (SD = 2.8).

21 elderly people (35%) had mild depressive symptoms, while 39 elderly people (65%) had moderate depressive symptoms. However none of them scored in the range of 31 to 40, which shows that none of them had severe depressive symptoms. The BDI scores ranged from 1 to 40 with a mean score of 21.7.

University of California Loneliness Scale

The UCLA scores in this study ranged from 15 to 40 with a mean score of 24.8. 4 (6.6%) of the elderly men and women experienced an average degree of loneliness (15-20), 52 (86.6%) had a moderate degree of loneliness (21-30), and the remaining 4 (6.6%) had a moderately high degree of loneliness (50-64).

Table-1. Mean SD and t-Values of Depression among Elderly Males and Females

Groups	Mean	SD	N	Df	t
Males	22.73	3.21	30	58	2.98**
Females	20.70	1.91	30		

**. p > .01; *.p > .05

Table 1 shows mean SD and t-values of depression among elderly males and females. A statistically significant difference was found among elderly males and females as the mean of elderly males was 22.73,

SD = 3.21 and that of elderly females was 20.70, SD =1.91 and the t-value = 2.98 (df = 58) was obtained.

Table-2. Group Statistics showing level of Depression in Males and Females

Groups	Mean	SD	N	Df	t
Males	25.80	4.26	30	58	2.17**
Females	23.77	2.85	30		

**. p > .01; *.p > .05

Table 1 shows mean SD and t-values of loneliness among elderly males and females. A statistically significant difference was found among elderly males and females as the mean of elderly males was 25.80, SD = 4.26 and that of elderly females was 23.77, SD = 2.85 and the t-value = 2.17(df = 58) was obtained.

Table 3: Correlation between Depression and Loneliness

Variables	Pearson r
Depression Loneliness	.092

*Loneliness and depression shows very low correlation as Pearson correlation coefficient (r = 0.09) which is not statistically significant among elderly men and women.

Discussion

The findings of the table 1 shows that there is a statistically significant difference among elderly males and females on the measures of depression. Hence the null hypothesis that there will be no difference in the frequency of depression between elderly women and men is rejected. The present findings are in similar to findings of Alpass and Neville. According to it Depression in the elderly is becoming an epidemic in our society. Elderly parents were often part of the family until they either went into nursing homes or died. Today, with families living in various parts of the country and more people living on limited incomes, elderly people find themselves more alone. Either a desire not to be a burden on children or the lack of funds finds many older people living alone without human contact for days at a time. Many are unaware of the resources that are available or are unable to navigate the system to get the help and companionship they need.[34]

The findings of the table 2 show that there is a statistically significant difference among elderly males and females on the measures of loneliness. Hence the null hypothesis that there will be no difference in the degree of loneliness between elderly women and elderly men is rejected. Another study suggested that Males had better quality of life and less feelings of loneliness than females. Specifically, elderly women seem to suffer from loneliness in comparison to the elderly males. It was also found that old (60 - 74 years old) had better quality of life, higher scores at subscales of Quality of Life Index and lower loneliness than oldest old (75 and above years old). Marital condition has also a great effect on quality of life and loneliness of elderly, married elderly had better quality of life and lower loneliness than divorced and widows/ers. Married with a marital disruption (divorce) had an unsatisfied quality of life. But the great fall of quality of life was when the disruption was considered from one partner‘s death.[35]

Another finding in this study is that women were found to be the most susceptible to both depression and loneliness. The sample size, though small, provided enough statistical evidence to investigate the extent to which the association between loneliness and depressive symptoms differed among men and women. The results, which were observed, investigated differences in the association between loneliness and depressive symptoms. The association between loneliness and symptoms of depression in both sexes were examined and found that they were comparably strong in men and women.[36]

The findings of the table 3 show that there is no significant correlation between the measures of loneliness and depression among elderly males and females. Hence the hypothesis that there will be no correlation between depression and loneliness in the elderly is correct. In agreement with the literature, the findings demonstrate that loneliness remained a significant risk factor for depressive symptoms.[37,-39] Loneliness, describes as a gnawing, chronic disease without redeeming features, has long been recognized as a strong correlative of depressive symptoms, and this study shows that, regardless of where the elderly live, loneliness is one of the strongest predictors of depression.[38] In another qualitative study suggests that loneliness in older adults is closely tied to depression. In the study, the

author found that loneliness is easily mapped onto standard assessments of depression and hopelessness in the population, thus upholding strong correlation between loneliness and depression demonstrated in this study. Both these findings contradicts with the present findings.[40]

For the participants, regular contact with family or family involved in one's care, on the other hand, played an important role, as they felt being appreciated and being cared. Many researchers have stressed the regularity in activities, like calling to, dining with or visiting the family or friends, as this gave an order to the life of elderly people and was something they could look forward to.

Elderly people need better physical health care and psychological care to nourish their well-being. Due to frail health condition, lack of adequate care and acorn by the family members, negligence by care givers, busy life schedule due to urbanization, elderly people are getting neglected. As a result they, become more vulnerable to physical and mental ailments. Institutional are is not just enough to rejuvenate their dormant mind and spirit. They need hospice care which includes keeping the old men and women at home in a conducive family environment and nursing them. In fact, hospice care is designed to provide palliative care and emotional support to dying patients and their family members.[41] Government policies and provisions for helping the senior citizens should be strictly implemented and monitored so that the benefits will reach them without much delay.

Conclusions

On the basis of obtained findings, the following conclusions can be made:

1. A significant positive correlation exists between loneliness and depression.
2. A significant difference was found on the measures of loneliness and depression among men and women.

Limitations

1. The areas chosen for this study were based on their proximity to the residence of the author and thus the population may not truly represent the actual elderly population in Gurgaon and NCR.
2. The sample size was restricted to few elderly persons. Hence in future, a similar study needs to be conducted on a larger section of the elderly population.
3. For determining gender differences, both male and female constituents of the sample should be equivalent in all respects.
4. Moreover, no formal diagnosis of depression was made in the sample used in the study. Self-report inventory was used for determining the level of depressive symptoms in the elderly persons.

Future Recommendations

Future research should focus on a larger representative sample of older adults which would allow more definite conclusions and give precise estimates of the distribution of different network types.

Second, besides the perceived formal aspect of depression and loneliness, more attention needs to be paid to other related concepts, such as physical mobility, sociability, communication patterns and conflicts in future research. Adding these variables may further help to reveal how relationships between other concepts like sociability etc contributes to well-being within specific support structures.

Third, older people need a broad range of opportunities and activities to help tackle loneliness. These can include care and befriending support, but just as important are opportunities that connect them to their communities, such as faith, learning, fitness, leisure and cultural activities.

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Original Article

Cognitive Behavior Therapy of Obsessions connected to strong value system

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ABSTRACT

This case series describes the treatment of a deeply religious person with strong value-laden teachings of purity in both thoughts and actions presented with complaints of unwanted intrusive blasphemous thoughts. His belief system had been open to catastrophic misinterpretations of the personal and negative significance of the intrusive thoughts, eventually his psychological problems surfaced. Avoidance and covert neutralization provided temporary relief but his obsessions persisted unless and until new evidences and arguments were presented to overturn misinterpretations. The theoretical conceptualization and treatment of obsessions and compulsions in the context of strong religious beliefs are discussed.

Key Words: *Value-laden teaching, Religious Beliefs, Purity.*

Introduction

Sigmund Freud (1907) was one of the foremost to refer obsessional neurosis as 'individual religion' and religion as 'universal obsessional neurosis'.[1] In 1976, Aaron Beck suggested that maladaptive emotions and behaviors are the results of dysfunctional beliefs and cognitions.[2] Contemporary cognitive-behavioral models suggest that Obsessive-Compulsive Disorder (OCD) develops when intrusive thoughts, doubts, fears, impulses, and images are misinterpreted as overly significant and evoke distress which force patient to engage in neutralizing behavior (e.g., compulsions), that are negatively reinforced by the immediate (but temporary) reduction in anxiety level.[3,4] In addition, patient often indulges into avoidance (e.g. avoidance of sharp objects, bathing, religious places, and so on) to stay away from obsessions and compulsions. However, use of avoidance in the long-term shields the troublesome beliefs from extinction and passively confirm inflated significance attached to the obsessions.[5] Patients with OCD believe that their thoughts are meaningful, important, their own but ego-alien and have serious potential consequences. The OCCWG model observed responsibility is one of the significant predictors of OC symptoms along with other five major belief domains of OCD, that were, over importance of thoughts, over estimation of threat, importance of controlling thoughts, intolerance of uncertainty, and perfectionism.[6,7]

It has been observed that strict moral and religious education also promotes personal responsibility. In 1997, Rachman proposed that ''people who are taught, or learn, that all their value laden thoughts are of significance will be more prone to obsessions as in particular types of religious beliefs and instructions."[8] Khanna and Channabasavanna commented that Indian culture emphasizes on purity and cleanliness and found a large number of symptoms related to washing and contamination among Hindus with OCD.[9] Here, purity is not just about the bodily cleanliness, but includes purity in thoughts, i.e. staying away from sexual thoughts. There is a religious practice in India where devotees are directed to the right path towards realization of

God by their gurus through a process known as *naamdaan/Gur Parsaad* (blessings of God). The disciple follows 10 disciplines such as*satya* (Truth), *ahimsa* (Non-violence), *Brahmacharya* (Celibacy), *asteya* (No desire to possess or steal) etc., before receiving naamdaan. They should have impeccable control over mind to abide by these strict religious principles and should not be distracted by doubts, delusions or illusions for a very long period of time.

Only a few are left in the last along different time and space according to their *Karma* (actions), faith, dedication and love for the Guru. Out of these few, only one may succeed to achieve. A person who follows such type of strong religious path would be particularly upset by the unwanted appearance of obscene impulses, images, or thoughts and might attach strong value to conventionally acceptable sexual ideas and behavior.

Additionally, Rassin and Koster[10] found that religiosity was positively correlated with the belief that thoughts (including involuntary thoughts) are the moral equivalent of actions (i.e., moral thought–action fusion [TAF]). For instance, a person might consider himself morally responsible for his objectionable thoughts and might get afraid of himself becoming totally uncontrollable. In 2010, Wheaton et al[11] studied relationship between obsessive beliefs and symptom dimensions in OCD and observed that beliefs about the importance of and need to control thoughts predicted the unacceptable thoughts dimension of OCD, which involves religious, sexual, and violent obsessions.

Case History

The case study is about a 26 year old male who studied till high school and owned a shop of electrical goods. He was diagnosed with Mixed Obsessional thoughts and acts according to International Classification of Disorders (ICD-10). He could not continue his studies due to the severity of illness and had been facing difficulty to run his shop. The presenting complaints were repetitive doubts, washing of hands, checking of locks, urges to speak obscenities, associated severe anxiety and sadness of mood for last 10 years. *Onset* of the illness was insidious and course was continuous and fluctuating. The client was apparently well approximately ten years ago and had been attending *satsangs (holy meetings)* with his parents daily since the age of 10 years. During the age of 14, he started developing interest in opposite sex and would have sexual thoughts. However, the teachings of *satsang* such as one should not have sexual thoughts and should consider other females as mothers or sisters, were creating dissonance. He would become frightful of these uncontrollable thoughts and doubts that he might not get the *naamdaan*, the blessing from supreme force (God) which would help him all his life from evil and take him to the path of God. Gradually, he started washing his hands repetitively with the fear of contamination and checking locks and other things repetitively. He would doubt that his pants would fall down or whether he had pulled up zipper of his pants or not. Though, he would find these thoughts senseless but would desperately seek reassurance from his parents and sometimes, even from strangers. He did not comply with any medicine regimen and his illness kept on waxing and waning. Nonetheless, he got *naamdaan* after a year of dedicated religious practice. He started doubting himself writing *naamdaan* to others on bills of his shop and would check it by tracing on the written words. He never employed any helper for his shop since he thought that they would disclose his illness to neighboring shopkeepers. He was also disturbed about his single status. He considered himself immoral due to sex related thoughts on seeing any female around him.

He had Dhat syndrome at the age of 16 years and had consulted a sexologist for the same, though had little improvement. There was no family history of psychiatric illness. He had been living with his parents who were very cooperative. His father was the decision maker of his family. *In his personal history,* he started masturbating at the age of 15 years and gained most of his sex related knowledge from unreliable sources such as friends, magazines, and so on. He was staunch believer of God and regularly attended *satsangs*. He was little reserved, never spoke much, restricted to small groups, and obeyed his parents before the onset of illness. In his first mental status examination, he was well kempt, though little restless and help seeking. Some stammering of speech and obsessions were observed. There was no cognitive impairment. He had intellectual insight to his illness.

Assessment

The target symptoms and their respective intensities were enlisted on Yale-Brown Obsessive Compulsive Scale (Y-Bocs). The target obsessions were concern with dirt and germs, bothered by sticky substances, forbidden sexual thoughts, excessive concern with right and wrong, fear of not saying just the right thing, and fear of saying things. The compulsions were excessive hand washing, other measures to prevent contact with contaminations, checking stoves, scissors, checking that nothing terrible will happen, checking that did not make mistakes, arranging things, need to tell, and confess. In the avoidance behaviour, he avoided females and refrained keeping helpers for his shop. The pre assessment score on Y-Boc Scale was 30, indicative of severe level of obsessions and compulsions. After therapeutic intervention, score on Y-Bocs declined to 10, suggesting mild level of obsessions and compulsions.

Case Conceptualization

The Case was formulated with the help of predisposing, precipitating and maintaining factors of the symptoms. The biological factor observed to be his pubertal age in which he attended teachings on morality and sins, when attraction towards opposite sex gets heightened. Eventually, he had conflicts between his teachings and sexual impulses, which led anxiety and fear of punishment from God. He attached personal responsibility (inflated responsibility) to unwanted thoughts and considered himself immoral (TAF). Dhat syndrome and associated bodily sensations in the presence of opposite sex added more importance to the unwanted intrusive sexual thoughts, took those bodily signs as indicators of impending loss of control. He had obsessions of contamination, orderliness and sexual content (Purity) that he neutralized through compulsions, decreasing his anxiety and consequently, negatively reinforcing his compulsive acts. His parents maintained his illness by reassuring him for almost every compulsion. In the process, his self-confidence declined and he sought reassurance even from strangers in absence of his parents. He became indecisive about everything related to him.

Treatment

First, the patient noted his obsessions and compulsions in a dairy with the help of the therapist, which were as follows: Fear of unlocked zipper of pants and subsequent checking; Fear of writing *naamdaan* and rechecking by tracing on the same words; Fear of towel falling down from hanger on toilet seat, getting contaminated and subsequent rearranging of towel; Fear of contamination with germs and subsequent excessive hand washing; Fear of theft in his shop and checking of locks subsequently; Fear of pants to fall down off his legs; Fear of telling about his illness to others and subsequent avoidance of people; Fear of getting sexual thoughts while visiting temples.

Therapeutic goals were set on the basis of cognitive behaviour framework. Short-term goals were psychoeducation, direct exposure to his intrusive thoughts, prevention of compulsive rituals, and identification and modification of client's misinterpretations of the intrusive thoughts. Long-Term Goals included teaching self-monitoring of symptoms and decision-making. Techniques of Cognitive Behavior Therapy including Exposure with Response Prevention (ERP), Cognitive Restructuring, Positive Self-Statements, and Decision-Making were planned. First, the client was given psychoeducation about OCD as a clinical problem rather than a matter of shame or threat in a calm and dispassionate manner to detoxify the obsessions and reduce their significance. He was told that average people also experience similar content of the thoughts and they can simply ignore or reject these thoughts as illogical. However, thoughts in case of patients with OCD are more intense, more frequent, and more upsetting in nature and they attached personal importance to the thoughts, considering them as signs of losing control or some threat. He was also explained about neutralization of obsessions to overcome the strong urge to cancel out those intrusive thoughts, which shielded the beliefs from disconfirmatory evidences. He had been using religious prayers to neutralize his religious/ scrupulosity obsessions involving the perception of sin, violation of morality, and fear of punishment from God.

A hierarchy of his compulsive acts was made on the basis of anxiety rated on visual analog scale (VAS). The least anxiety-provoking obsession was fear of unlocked zipper and consecutive repetitive checking. The first technique used was *Exposure*

and Response Prevention (ERP) to reduce the anxietyrelated to compulsions. He was also assigned homework to practice ERP. His father was his co-therapist and told not to provide him reassurance and instead, motivate him. Subsequently, he was taught *self-instructional statements* to achieve self-control. In the middle phase of intervention, he was helped to replace the catastrophic misinterpretations with more realistic and benign explanations of his intrusive thoughts to alter the personal significance through cognitive tactics. Statement of the most important unwanted intrusive thoughts (UIT), as described by the patient was "I have repeated images of engaging in unacceptable sexual acts and I am not able to control myself."

Client was given knowledge about natural sexual attraction between opposite sex. The discussion on sex as a taboo topic in Indian culture helped the client to understand that his maladaptive behavior and anxiety were the result of catastrophization due to the conflicts between his sexual thoughts and his religious values. The patient was further, encouraged to make alternative interpretations of the other intrusive thoughts and to match the available evidence for and against the original catastrophic significance and the alternatives. Behavioural experiments were also designed to collect new evidences that permitted different interpretations.

In a study by Sica et al highly religious catholic group had higher scores on moral TAF than low religious group.[12] The client had imposed strict moral standards upon himself and was hyper vigilant to religious and moral sins. His intrusive sexual thoughts were in conflict with his religious beliefs with emphasis on practice of celibacy until marriage. He engaged himself in excessive prayers, confessions, and sought constant reassurance from religious authorities to avoid punishment of taking away his *naamdaan* from omniscient God (Moral TAF). His religious beliefs were very rigid and difficult to challenge as he had been living all his life encapsulated in these beliefs. Though his openness to scientific temperament made the process easy and he could find sense in the alternative interpretations. Moreover, he could stop using avoidance and chances of gaining disconfirming evidence. *Decision-Making* exercise was introduced to make him independent in view of his constant seeking of reassurance. He learnt self-monitoring of significance attached to obsessive thoughts and could practice cognitive tactics on the thoughts. Finally, the end phase of the therapeutic process was explained to the client to make the termination easy.

Discussion

In religious people, overly strict moral code along with the tendency to catastrophization of significance of intrusive unwanted thoughts might lead to the development of obsessions.[12,13] Studies have reported religious obsessions load on a factor with sexual obsessions on Y-Bocs symptom checklist.[11,14,16] In the present case study, we attempted to understand patient's sexual obsessions in the context of his religious beliefs and help the patient replace the catastrophic misinterpretations with more realistic and benign explanations of his intrusive thoughts to modify the associated behaviours (i.e. reduction of avoidance, neutralization, suppression, concealment). We suggest that when a clinician finds a patient with sexual obsessions, it is suggested to deeply understand his value system that might be precipitating his illness and guide him to see his moral principles from different perspective. In case, patient belongs to a culture that we are not oblivious to, we can consult religious authorities/texts to understand the client's perspective to his illness. We can even engage patient's guru/mentor in the process with the consent of patient for better results.

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Original Article

Suicidal ideation and Stress in Epilepsy Patients in Meerut

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ABSTRACT

Background: *Epilepsy and suicidal ideation often present significant challenges for a clinician.* ***Methodology:*** *It was a pilot study conducted in Meerut area with epilepsy patients; along with, variables of suicide ideation and stress.* ***Results:*** *Findings obtained by means and Karl Pearson–product moment correlation (r=0.49) showed strong positive relationship between suicidal ideation, stress and epilepsy.* ***Future suggestion:*** *Further studies are needed to examine whether stress and suicidal ideation can reduce epilepsy in a gender-specific manner.*

Keywords: *Epilepsy, Suicidal ideation, Stress*

Introduction

Charcot's term, "hysteron epilepsy", implies brain mechanisms in common between epilepsy and hysteria which do not exist. The term psycho seizure is also misleading, as psychogenic factors can play an important role in precipitating frank epileptic attacks. Briquet showed his statistics that nearly three quarters of his hysterical patients suffered from convulsion attacks.[1] Most recently Reeds reported that 9% prevalence of convulsions amongst patients admitted to Maudsley Hospital between 1949 and l964 with a diagnosis of hysteria.[2] The occurrence of pseudoseizures in patients with frank epilepsy is also not uncommon though no valid prevalence figures exist in literature.

Suicidal ideation refers to thoughts engaging in behavior intended to end one's own life. Merely, having thoughts of death is not considered suicide ideation (although this is sometimes referred to as "passive suicide ideation".[3]

According to Atkinson, Berne, and Wood worth,[4] stress is a state of strain, whether physical or psychological. In current usage, it is used interchangeably to describe various aversive stimuli of excessive intensity, the physiological, behavioral, and subjective response to them ,the context mediating the encounter between the individual and stressful stimuli or all the above as a system. Cannon propounded the stress concept of disease. Rabkin and Struening[5] critically evaluate the literature in this field followed the sequence of conditions, social stressors, mediating factors, stress onset of illness. Bharti and Sudarsanan[6] concluded that life stress as an internal or environmental demands (both) tax or exceed the adaptive resources of an individual, social system or tissue system.

Goldberg[7] reveals that some stress can be good. It can be a challenge that keeps us alert, motivated and ready to avoid danger. But too much stress can make us sick. And it can bring on or worsen certain systems or diseases, research show. ICD-10 mentioned that there is an immediate temporal connection between the impact of an exceptional stressor and onset of symptoms, which is within minutes.

Generally epilepsy is any of a group of nervous disorders characterized by either focal or generalized convulsions. The chief forms are petit mal, in which there may be only an extremely transitory loss of

consciousness accompanied by blinking of the eyes, or an automatic act; grand mal or seizures in which the individual falls to the ground and suffers generalized convulsions; and psychomotor attack, in which there are outbursts of violent activity, sometime distinctive in nature, for which the individual is amnesic.[4] For other syndromes the cause is unknown. Epilepsy syndromes are frequently described by their symptoms or by where in the brain they originate.

Keeping in mind above review of literature, we queried some idea as to study suicidal ideation, stress and epilepsy in and around Meerut. It was a pilot study to know whether there is some positive or negative relationship between the suicidal ideation, stress and epilepsy or not.

Methodology

In this study two inventories have been used, namely, suicidal ideation developed by Beck et al[8] and Singh Personal Stress Source Inventory (SPSSI) developed by Singh et al[9] Inventory is an instrument for assessing the presence or absence of certain behaviors, interests and attitudes etc. Inventory takes the forms of tests of questions to be answered. Pearson's correlation coefficient is used in statistics to measure how strong a relationship is between two variables. It is commonly used in linear regression. It gives a value between -1 and +1.

Sample

50 epilepsy patients had been selected and diagnosed by Neurophysician at MIMHANS Meerut and other neurological clinics situated at the centered place of Meerut.

Procedure

Diagnosed by the neurophysician, who is qualified person D.M. or M.D. referred by then, rapport would be established and explained the nature of the study shifted to them. Consent letter was filled and then inventory was applied to them. If person/ patient were layman then first authors spoke loudly item by item and marked answer himself/herself.

Table-1: Gender distribution of male and female with epilepsy

Gender	Number	%
Male	30	60%
Female	20	40%

Table-2: Duration of epilepsy (N=50)

Duration of illness in years	No. of patients	Percentage (%)
01-09	23	46%
10-19	14	28%
20 and above	13	26%

Table-3: Showing suicidal tendency of patients

Total No. of patients	No. of patients who have suicidal ideation tendency	No. of patients who have no suicidal ideation tendency
50	40	10

Table-4: Showing mean and coefficient correlation between suicidal ideation and stress in epileptic patients

Variables	Mean scores	Product moment Correlation	Interpretation
Suicidal ideation	9.44	0.49	Moderately high correlation

Discussion and Conclusion

This study was an attempt to examine suicidal ideation, stress and epilepsy. It may be concluded from the above results that stress is indeed an important factor in the lives of epilepsy patients. It may be concluded that epileptic patients have suicidal ideation and stress in strong positive relationship manner, as Standage and Fenton[10] observed that precipitating stress factors related to onset of the pesudoseizures are frequently present in 80% of the pseudoseizure patients with 53% psychological and 27% physical in nature.

According to Lazarus stress is regarded as a process of transactions between the individual and environment.[11,12] Kishwar Ahmed Shirali's personal communication instituted that we must not forget important factor in epilepsy studies concerned with women and must look for emotional factors and its relationship with epilepsy.[13]

In conclusion, suicide is forever but the stress leading to it is often temporary. Regardless of what may cause suicidal thoughts, it is critical that one should get help immediately.

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Original Article

Comparing Spiritual Well-being, Perceived Social Support and Defense Mechanisms in Hemodialysis Patients and Healthy Individuals

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ABSTRACT

Background:*Hemodialysis is one of chronic diseases considered as public health issues and a pervasive and widespread disorder. According to available reports, prevalence of the disease in Iran is increasing. However, the research on spiritual well-being, perceived social support and defense mechanisms in hemodialysis patients requires further investigation.* ***Methodology:*** *The present study was carried out to compare the perceived social support, defense mechanisms, and spiritual well-being in patients undergoing hemodialysis with healthy individuals in Khorramabad. The research method was descriptive and of causal-comparative type. The sample consisted of 200 individuals (100 hemodialysis patients referred to Imam Reza (AS) hospital in Khorramabad in 2014-2015 and 100 healthy people over 40 years of retirement center in Lorestan province who did not suffer certain diseases) and were selected through random and available sampling method. To collect data, Ellison and Paloutzian's (1982) spiritual well-being scale (SWBS), defense style questionnaire (DSQ) and perceived social support scale (PSSS) were used. Data were analyzed using descriptive statistics (mean and standard deviation) and inferential statistics (independent t-test and multivariate analysis of variance) with SPSS software.* ***Results:****There are significant differences between hemodialysis patients and healthy individuals in spiritual well-being ($t = 2.4$; $P < 0.001$), immature defense style ($F = 7.490$) and neurotic ($F = 11.445$) ($P < 0.001$). There was no significant difference between the two groups in perceived social support and mature defense style.* ***Conclusion:*** *This study highlights the importance of the perceived social support, spiritual well-being and mature defense style in this disease.*

Keywords: *Spiritual well-being, Perceived social support, Defense styles, Hemodialysis, Healthy*

Introduction

Hemodialysis is one of chronic diseases considered as public health issues and a pervasive and widespread disorder1. In this disease, kidney cannot do metabolism and excrete the fluid of the body, so the toxic substances are produced in the blood.[2] The outbreak in 400 thousand people has been reported in the United States by the end of 2004 that 300 thousand people have been treated with hemodialysis.[3] According to available reports, prevalence of the disease in Iran is increasing.[4]

Patients' health depends on four factors that affect treatment outcomes. These factors include restrictions on the metabolism of body fluids, diet (low salt, low potassium, phosphorus deficiency, etc.), taking medication and attending therapy sessions.[5-7] Despite the importance of the treatment of this disease, many of these patients do not follow the diet suggested. As a result, their life quality reduces and the death casualties increase. In addition, a lot of expanses are imposed on the health care system.[8]

Social support is one of the psychosocial factors that facilitate health behaviors. Researchers have shown that family and friends' support have positive effects on self-support behaviors of these patients, including emotional, physical and fiscal support.[9] Also, social support is defined as the access to family members and friends who provide mental and physical resources. Social support contributes to patent's adjustment with the stress caused by the disease,[10] prevention of adverse physiological effects and enhancement of their performance and improvement ofthe physical, mental and social conditions,[11,12] reduction of anxiety, increase of self-esteem and development of social relationships.[13,14]

Despite the importance of the predictability of social support in the health of these patients, the perception is more important than social support. In other words, patients' attitudes towards social support are more important that social support, because these attitudes have advantages for their health.[15] Perceived social support refers to a personal understanding of gaining support as well as to the actual understanding of the person.[16] Perceived social support is associated with health outcomes for patients, including improved psychological well-being[17] and patients' quality of life.[18] Also, the patients who enjoy social support are less likely to suffer from mental disorders.[15] One factor that varies in hemodialysis patients is the defense mechanism. Defense mechanisms are automatic psychological processes that protect individuals against anxiety and awareness of the risks or internal and external stressors. People often are not aware of these processes.[19] Defense mechanisms are significantly associated with psychological well-being, mental health and mental adjustment that may effect on adjustment with symptoms of chronic medical diseases and debilitating diseases. The hemodialysis patients use the denial, return and reaction mechanisms that are the common features of cognitive disorders and less use the reaction mechanism.[20]

In addition, hemodialysis reduces the patients' quality of life.[21] One of the factors associated with patients' quality of life is spiritual well-being.[22] Spirituality is a personal effort to understand the aspects of life that gives meaning to life and does not only include religious worship and participation in religious groups. Religion is a potential source of mental health and the mechanism to deal with stressor experiences.[23,24] Studies have shown that there is a relationship between the spiritual well-being of hemodialysis patients and their mental health, and spiritual well-being is the predictor of mental health, sleep disorders and psychosomatic complaints.[25,26] Many patients are willing to meet their spiritual and religious needs. Studies have shown that spiritual health is the most important factor in health of patients. However, the spiritual needs of patients are often overlooked.[27] Some studies have shown that the physical, psychological and social functioning is disrupted in people without spiritual well-being and achieving to their potential aspects becomes impossible. So they cannot have a high quality of life.[28] Many studies have investigated the positive effects of spirituality on patients who suffer from chronic diseases for a lifetime.[29] Also, the positive effects of religion on cancer patients to cope with the disease have been reported.[30] Spiritual need in hemodialysis patients is about 0.35 to 0.53 and is among their most important needs,[31] which affects their compatibility with the disease[32] and coping with stress.[33] It seems that religion and spiritual well-being also have positive effects in life in hemodialysis patients. However, the research on spiritual well-being and perceived social support and defense mechanisms in hemodialysis patients requires further investigation. So according to what was said, the objective of the present study is to examine the perceived social support, defense mechanisms, and spiritual well-being in hemodialysis patients compared to healthy individuals.

Methodology

The research method is descriptive and of causal-comparative type. The study population consisted of all dialysis patients referred to Imam

Reza (AS) Hospital in Khorramabad in 2014-2015, aged over 40 years with no other special disorder (hepatitis, AIDS, cancer, etc.) except kidney disorder. Also the healthy sample was selected among people over 40 years of Retirement Center in Lorestan province who did not suffer certain diseases). The sample size was 200 people (100 hemodialysis patients and 100 healthy people) that were selected according to previous researches and research suggestions. Sampling was done based on available sampling method for hemodialysis patients and random sampling method for healthy people, so that the hemodialysis patients were selected among the patients referred to Imam Reza (AS) Hospital in Khorramabad through available sampling, and the healthy sample were selected among people over 40 years of Retirement Center in Lorestan province through simple random sampling method. Data were analyzed using SPSS-19 software. For data analysis, the mean, standard deviation, independent t-test and multivariate analysis of variance were used for both groups. To collect data from three questionnaires were used as follows:

Spiritual Well-Being Scale (SWBS): This scale has 20 items and was developed by Ellison and Paloutzian.[34] To answer questions, a six-point Likert scale was used that ranged from "strongly agree"[6] to "strongly disagree".[1] A higher score indicates a higher spiritual well-being. Paloutzian and Ellison spiritual well-being reported Cronbach's alpha coefficient for this questionnaire equal to 0.93.[34] This scale was also validated in internal studies and its Cronbach's alpha was reported equal to 0.90 and its reliability equal to 0.85 using test-retest method35. In the present study, Cronbach's alpha was 0.78.

Defense Style Questionnaire (DSQ): This tool is a questionnaire of 40 items in 9-point Likert scale and measures twenty defense mechanisms (projection, false friends, suppression, Suprematism, rationalization, humor, diffraction, devaluation, denial, fantasy autistic, lamination, idealization, passive aggression, anticipation, body building, relocation, transition to action, invalidation, isolation) on the basis of three mature defense, neurotic and immature styles. Style with the highest score is considered as the dominant style used by the individual. Cronbach's alpha coefficient for each defense style has been estimated appropriate.[36] In Iranian studies, Cronbach's alpha coefficients for the three mature, neurotic and immature mechanisms were obtained equal to 0.74, 0.72, and 0.74, respectively.[37] In the present study, reliability was obtained equal to0.81 using Cronbach's alpha.

Perceived Social Support Scale (PSSS): This scale consists of 12 items that have been designed as 5-point Likert scale and measures three components of perceived support by the family (4 items), perceived support by important people (4 items), and perceived support by friends (4 items). The developers of the scale calculated Cronbach's alpha of the scale items equal to 0.91, 0.89 and 0.91, and to assess the reliability of differentiating factors of its subscales, they obtained the correlation of this scale with adolescents family care scale (AFCS) as significant (Canty-Mitchell, 2000). In the internal studies, this scale was standardized so that it was approved through factor analysis and internal consistency for its subscales was obtained equal to 0.78, 0.81, and 0.87 respectively using Cronbach's alpha39. In the present study, the total reliability was obtained equal to 0.88 through Cronbach's alpha.

Results

To use parametric indices, data distribution must be normal. To determine the distribution of the population (normality of data), Kolmogorov-Smirnov test was used that the results showed the normal distribution of data. Table 1 shows the demographic information of both groups (hemodialysis and healthy) in terms of gender and education. Table 2 shows the mean and standard deviation of research variables.

As can be seen in Table 2, the mean of spiritual well-being in hemodialysis patients is higher than healthy people. Also, the mean of immature and neurotic defense styles in hemodialysis patients is higher than healthy individuals, but the mean of mature defense styles in healthy individuals is higher than hemodialysis patients.

As can be seen in Table 3, there is no significant difference between the two groups in perceived social support ($t=2.4$; $P < 0.64$).

As can be seen in Table 4, there is a significant difference between the two groups in spiritual well-being ($t=2.4$; $P < 0.001$).

Results of Table 5 shows that there is a significant difference among the mean scores of mature

Table-1. Demographic information of both (hemodialysis and healthy) groups in terms of gender and education

		Hemodialysis		Healthy	
		Frequency	Percent	Frequency	Percent
Education level	Primary school	48	48%	40	40%
	Diploma	27	27%	30	30%
	Associate	10	10%	12	12%
	Bachelor of art	15	15%	18	18%
Gender	Male	50	50%	50	50%
	Female	50	50%	50	50%

Table-2. Mean and standard deviation of spiritual well-being, perceived social support and defense mechanisms in both (healthy and hemodialysis) groups

Variable		Hemodialysis		Healthy	
		M	SD	M	SD
Spiritual well-being		89.61	9.52	74.63	12.75
Perceived social support		53.45	14.45	59.08	16.24
Defense mechanisms	Mature	4.26	0.847	5.87	0.666
	Immature	3.47	0.563	2.96	0.460
	Neurotic	4.28	0.396	3.62	0.640

Table-3. Results of independent t-test (difference between hemodialysis and healthy groups) in perceived social support variable

Variable	Hemodialysis		Healthy		t-test	p-value
	SD	M	SD	M	2.4	0.64
Perceived social support	14.45	53.45	16.42	59.08		

Table 4. Results of independent t-test (difference between hemodialysis and healthy groups) in spiritual well-being variable

Variable	Hemodialysis		Healthy		t-test	p-value
	SD	M	SD	M	7.11	0.001
Spiritual well-being	9.52	89.61	12.75	74.63		

Table-5. The results of multivariate analysis of variance for subscales of defense styles in two (hemodialysis and healthy) groups

Variables	SS	df	MS	F	P
Statistical Indices					
Mature defense style	19.401	1	19.401	33.373	0.001
Immature defense style	1.917	1	1.917	7.490	0.001
Neuroticdefense style	3.251	1	3.251	11.445	0.001

defense style (F = 33.373), immature defense style (F = 33.373) and neurotic defense style (F = 33.373) in the two (hemodialysis and healthy) groups (P < 0.001). The results show that there is a significant difference between the two hemodialysis and healthy groups, at least in terms of one of the dependent variables. In other words, hemodialysis patients use more immature defense and neurotic

mechanisms compared to healthy individuals.

Discussion

The aim of the present study was to investigate spiritual well-being, perceived social support and defense mechanisms in hemodialysis patients compared to healthy individuals in Khorramabad. One of the results of this study was the difference between spiritual well-being in hemodialysis patients and healthy individuals. Other studies also have shown that hemodialysis patients have a high spiritual well-being,[40,41] which is consistent with the present research. Islami, Rabiee, Kheiri, Noshabadi and Masoudi[41] showed the factors that can predict spiritual well-being in hemodialysis patients may include the family, education, financial status, marital status, occupational status and the use of sleep medications, and spiritual well-being is one of the factors influencing the reduction of stress and tension. In addition, Martinez and Custodio[40] found that hemodialysis patients enjoy high spiritual well-being and spiritual well-being is a strong predictor of mental health and improves it.

Studies have shown that hemodialysis patients use some strategies to deal with illness and treatment.[42,43] One of these strategies is the spiritual well-being that is the different way to cope with stress. Spiritual well-being can be reflected as a state of reflection of emotions and behaviors and positive cognition of relationships with self, others, the transcendental existence and the nature that equip the individual with identity, integrity, satisfaction, pleasure, contentment, beauty, love, respect, positive attitude, inner peace and objective and life orientation.[44] Suffering is a personal experience that causes the revision in the values and purposefulness in life, and creates a new meaning for life.[45] In other words, spirituality and religious tendency is a strong protective shield to prevent stresses and physical diseases[46] and increases the power to withstand high stresses and has a positive association with physical and mental health.[47] People often seek a relationship with God or a supreme being to help them find a sense of control over painful situations. In fact, belief in a Supreme Being helps people copes with the condition and continues to grow and flourish.

It seems that spirituality is a mechanism to deal with disease that hemodialysis patients also apply it to cope with critical conditions. Given that the existential well-being (one of the components of spiritual well-being) is associated with survival and life, it is likely that by improving it, people's beliefs about the pain that they are experiencing are affected, so that the anxiety related to survival is reduced through spiritual well-being and spirituality. Spiritual well-being also causes purposefulness in life and finding the meaning of life. As a result, life expectancy and trust in God increases in these patients.

Another result of this study shows that there is no significant difference between hemodialysis patients and healthy individuals in social perception. The results of the preceding studies have shown that hemodialysis patients have an average perception of social support.[48-53] Rambod and Rafiee indicated that hemodialysis patients have a high perception of social support (69.9%).[53] Findings of another research showed that 68.3 percent of hemodialysis patients have a high perception of social support.[52] The reason for differences in the results of the previous studies with those of present study cab be due to the difference in samples, including the sources of support that the patients receive, their attitudes and expectations.

The latest findings of the present study showed that there is a significant difference between hemodialysis and healthy people in immature and neurotic defense mechanisms, but no significant difference was observed between the two groups in terms of mature defense mechanism. This result is consistent with the results of previous researches, including Musazadeh, Adib and Motavally[54] that showed that there is no different between the patients and healthy individuals in the developed defense mechanism, but it is inconsistent with the findings of Martinez et al.[40] This inconsistency may be due to available sampling and the research population, because there are some differences between the population of this study and those of previous researches in terms of economy, culture, and education.

It seems that the life of the patients is affected by the present situation. So their life experiences may create defense mechanisms. Early stages of dialysis may cause stress, thus patients need support sources.[55] Among these sources of support are defense mechanisms.

Defense mechanism reversely changes the reaction of unacceptable motives, while the return includes relinquishing anxious thoughts and negative feelings of awareness. Denial is an immature mechanism and associates with mental incompatibility. These patients usually have high levels of denial which usually deny their damage and refuse the complete treatment of the disease.[56] However, in illness situation, denial may have a security role for itself and protect patients from emotional feelings.[57] Also, a research by Wilson and Short indicated that the patients who do not use the denial defense mechanism have higher depression and sleep disorders.[58]

Spiritual well-being and relying on a superior power in life cause the individuals improve their social competence and cope with problems when confronting with stressor and challenging conditions of life and reach inner peace through establishing relation with a superior power. Also, it seems that the defense mechanisms have both positive and negative results for hemodialysis patients. We say 'positive results' because they somehow enhance mental health and reduce sleep disorders and 'negative results' because they cause not following the trend of treatment, resulting in treatment recession and increasing the vulnerability to disease. Also, defense mechanisms distort the reality and reduce the insight capacity and self-discovery.

Like any other study, the present study had limitations, including restrictions on external validity because the study population only included hemodialysis patients in Khorramabad city. In addition, the available sampling method was used. Therefore, caution should be taken in generalizing the results. In future studies, it is recommended that a broader population is studied and the research is conducted longitudinally with respect to development in the treatment of hemodialysis patients. It is also recommended that the patients are provided with more support resources. In addition, the results of this study emphasize on the importance of changing the fundamental mechanisms like defensive styles as the treatment outcome. They also emphasize on the necessity of changing the defense mechanisms to mature defense mechanisms such as sublimation.

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Original Article

Mental Health Literacy of Adults in Urban and Rural Areas of Mangalore

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ABSTRACT

Introduction: *Mental health literacy is important for the population to recognize and seek treatment in the early stages and for the prevention of mental disorders. The urban and rural population have difference in their culture and socio demographic characteristics which may influence the mental health literacy.* ***Objectives :*** *The objective of the study was to compare the mental health literacy among adults in rural and urban areas of Mangalore.* ***Methods:*** *A descriptive comparative survey approach was used for the study. A sample of 500 adults i.e. 250 each from urban and rural areas were selected by using convenient sampling. Data was collected by the questionnaire on mental health literacy.* ***Results:*** *The findings of the study showed that the mean and standard deviation of mental health literacy among urban adults (36.22 ± 11.05) was higher than that of rural adults (27.57 ± 9.81). There was a significant difference in the mental health literacy of rural and urban adults (p = 0.001*).* ***Conclusion:*** *The mental health literacy of rural adults was found to be lower compared to that of urban adults. Majority of the Indian population resides in rural area and it becomes important to adopt measures to improve the mental health literacy. The choice of the measures should be according to the population characteristics and the availability of resources.*

Keywords: *Adults, Mental health literacy, Urban and rural population.*

Introduction

Mental disorders are generally defined by a combination of how a person feels, acts, thinks or perceives. If it is unrealized or untreated in early stages it will lead to emotional, physical and socioeconomic distress or disability to affected individual, family and society. Mental health and mental health disorders are much neglected field these decades. A study conducted for the National Commission on Macroeconomics and Health (NCMH), New Delhi (2005) stated that the urban and rural prevalence rate of psychiatric disturbances in India are 73 and 70.5 per 1000 population respectively.[1] India is the second most populous country in the world.Out of 121crores of Indians, 83.3 crores live in rural areas while 37.7 crores stay in urbanareas as per 2011 census.[2]

A report of National Institute of Mental Health and Neuro-Sciences (NIMHANS) in 2008, showed that in India 70 million people suffer from mental ailments and 50-90 percent of them are not able to access corrective services due to less awareness and negative attitude or stigma towards mental illness.[3] The report of District Health and Family Welfare Office of Dakshina Kannada showed that nearly 238 neurotic and 300 psychotic cases of mental disorder were recorded during the year 2007-2008. Among these cases only 59 neurotic and 77 psychotic cases had approached for the treatment.[4]

The term 'mental health literacy' originated as an extension of the concept of 'health literacy' was used

to describe knowledge and beliefs about mental disorders, which aid their recognition, management or prevention.[5] Mental health literacy helps the general population to identify the occurrence of illness in the early stage and seek the treatment, change attitude among population, fight against the stigma in society and also help to prevent the disorders. It also offers insight into the spectrum of opportunities for health and mental health professionals to contribute to primary and early intervention alongside treatment and rehabilitation.

Rural and urban people have differences in their culture and socio-demographic characteristics which may affect their mental health literacy. Generally rural population experience a number of health risks and mental disorders compared to urban population because of lack of knowledge regarding management and seeking professional help.[6] There are a lot of variations in the characteristics of people in urban and rural areas which include educational qualification, socio economic status, culture, and life style, exposure to various health promotion programmes and new technologies, and accessibility to the health care services. Poor mental health literacy may hold the people from seeking professional help and adopting preventive measures. The research on mental health literacy is limited from India despite of growing evidence of mental disorders.

Methods

A descriptive comparative survey approach was used for the study. The urban area, Atribail and rural area, Haleyangadi, in Mangalore with a population of 2380 and 4382 respectively were chosen for the study. The data was conducted from 7th November to 6th December 2014. The investigators obtained permission from District Health Officer, Mangalore Taluk, Dakshina Kannada District. A sample of 500 adults i.e. 250 each from urban and rural areas were selected by using convenient sampling. Based on the pilot study findings, this sample size was required to detect any significant difference between the groups at a 5% significance level with a power of 90% (P1 = 45% & P2 = 58%). The inclusion criteria for the subjects was as follows: adults in the age group of 21-60 years, able to read and understand English or Kannada, adults residing in urban area for the past five years, adults born, brought up and currently residing in rural area. Health care professionals and adults diagnosed with mental disorders were excluded from the study. A structured questionnaire on mental health literacy was administered to the participants in English and local language, Kannada. Questionnaire on Mental Health Literacy included 35 multiple choice items in five domains of mental health and promotion of mental health, mental illness- concepts, myths and facts, causes and risk factors, signs and symptoms and management. Each correct response was scored 1. Four of the items had multiple responses. The maximum score for the tool was 65. The content validity of the tool was done by the experts. The reliability of the tool was established by split half method (Internal consistency) was 7 and the reliability coefficient (r) was 0.84.

Statistical Analysis: Data was analyzed using SPSS version 14. Data was described using mean and standard deviation. Unpaired 't' test was used to compare the mental health literacy of rural and urban adults. Bivariate analysis was done using Chi square test and Fishers exact test. All statistical tests were two-tailed and significance level set at 0.05.

Ethical approval: Ethical approval for the study was obtained from Father Muller Institutional Ethics Committee, Father Muller Medical College, Mangalore. Informed written consent was obtained from the participants prior to the study.

Results

Table 1 shows socio–demographic profile of the study population. Majority of the patients were in age-group of 41-50 years followed by 31-40 years, were Hindus, primary or above educated and had no mental illness in the family.

The 't' value computed for the comparison of mental health literacy among urban and rural subjects was 9.26 (p = 0.001*) which showed a significant difference in the mental health literacy of rural and urban adults (Table.2). The mental health literacy of urban adults was higher than that of rural adults.'t' values computed for the domain-wise comparison of mental health literacy in urban and rural subjects are as follows: mental health and promotion of mental health (p = 0.001*), mental illness-concepts, myths and facts (p = 0.001*), causes and risk factors (p = 0.001*), signs and symptoms (p = 0.021*) and management (p = 0.240). There was a significant difference in the domains of mental health literacy of rural and urban adults except in the domain of management (Table. 3).

Table 4 showed that among urban adults there

Table-1. Socio–demographic profile of the study population (n = 500)

Sl No.	Variables	Urban (n_1 = 250)		Rural (n_2 = 250)	
		Frequency	Percentage	Frequency	Percentage
1	**Age in years**				
	21- 30	58	23.2%	24	9.6%
	31- 40	101	40.4%	95	38.0%
	41- 50	38	15.2%	106	42.4%
	51 -60	53	21.2%	25	10.0%
2	**Gender**				
	Male	125	50%	125	50%
	Female	125	50%	125	50%
3.	**Religion**				
	Hindu	128	51.2%	137	54.8%
	Christian	32	12.8%	3	1.2%
	Muslim	90	30.0%	110	44.0%
4.	**Educational status**				
	No formal education	–	–	32	12.8%
	Primary	12	4.8%	77	30.8%
	High school	77	30.8%	63	25.2%
	PUC	82	32.8%	44	17.6%
	Graduate	66	26.4%	32	12.8%
	Post graduate	13	5.2%	2	0.8%
5.	**Occupation**				
	Professionals	77	30.8%	32	12.8%
	Skilled	15	6.0%	44	17.6%
	Business	24	9.6%	22	8.8%
	Unskilled	–	–	64	25.6%
	Home maker/ student	76	30.4%	52	20.8%
	Unemployed	49	19.6%	32	12.8%
	Retired	9	3.6%	4	1.6%
6.	**Residence**	250	100%	250	100%
7.	**Monthly income**				
	3001 – 6000	–	–	38	15.2%
	6001 – 9000	–	–	121	48.4%
	9001 – 12000	–	–	75	30.0%
	>12000	250	100%	16	6.4%
8.	**Presence of mentally ill patients in the family**				
	Yes	22	8.8%	45	18.0%
	No	228	91.2%	205	82.0%

Table 2: Comparison of mental health literacy of rural and urban subjects (n = 500)

Variables	Mean ± SD	MD	t value	p value
Mental health literacy of Urban (n_1 = 250)	36.22 ± 11.05	8.65	9.262	0.001*
Mental health literacy of Rural (n_2 = 250)	27.57 ± 9.81			

was an association of themental health literacy and demographic variables i.e. age (p = 0.001*), gender (p = 0.001*), education status (p = 0.001*), and occupation (p = 0.001*). Also there was an association of mental health literacy and the demographic variables of rural adults i.e. age (p = 0.01*), gender (p = 0.031*), education status (p = 0.001*), occupation (p = 0.001*), and monthly income (p = 0.001*)

Disclusion

This study is descriptive with comparative approach to find the level of mental health literacy among the adults in urban and rural areas. The mean and standard deviation of mental health literacy among urban adults was 36.22 ± 11.05 whereas that of rural adults was 27.57 ± 9.81.The 'p' value (0.001*) computed showed that there was a

Table 3: . Domain wise comparison of mental health literacy of rural and urban subjects (n = 500)

Domains	Urban (n_1 = 250) Mean ± SD	Rural (n_2 = 250) Mean ± SD	t Value	p Value
Mental health and promotion of mental health	6.49 ± 2.86	4.18 ±2.91	8.910	0.001*
Mental illness-concepts, myths and facts	8.66 ± 3.17	5.47 ± 3.88	10.045	0.001*
Causes and risk factors	7.34 ± 1.83	6.21 ± 1.88	6.767	0.001*
Signs and symptoms	6.10 ±1.43	5.75 ± 1.74	2.266	0.021*
Management	6.22 ± 3.87	7.53 ± 5.04	1.178	0.240

p <0.05

Table 4: Association of mental health literacy of urban and rural adults with socio-demographic variables (n = 500)

p < 0.05, Statistical tests: Chi square and fishers exact test

Sl. No.	Variables	Urbanp Value	Ruralp Value
1.	**Age (In years)**		
	< 40		
	> 40	0.001*	0.001*
2.	**Gender**		
	Male		
	Female	0.001*	0.031*
3.	**Religion**		
	Hindu		
	Christian		
	Muslim	0.259	0.383
4.	**Educational status**		
	No formal education		
	PrimaryHigh school		
	PUC		
	Graduate and above	0.001*	0.001*
5.	**Occupation**		
	Professional		
	Non-professional		
	Unemployed	0.001*	0.001*
6.	**Monthly income**		
	<12,000>		
	12,000	_	0.001*
7.	**Presence of mentally**		
	ill patients in the family		
	Yes		
	No	0.37	0.14

significant difference in the mental health literacy of urban and rural adults. The mental health literacy of urban adults was higher than that of rural adults. The probable reasons for this difference may be the variations in exposure to the various technologies, health care facilities, socio-economic background and culture which directly or indirectly influence their mental health literacy.

Knowledge influence the attitude of the individuals. A comparative descriptive study was conducted in Punjab to assess attitude of rural and urban community people towards mental illness. Cross sectional survey was carried out among randomly selected rural and urban community people (n = 200). The results revealed that the urban community subjects showed more positive attitude

than rural people. This study concluded that there is a need to improve the knowledge of rural community people regarding mental disorders and its related aspects.[8]

A comparative descriptive study conducted in Malaysia to assess the depression-related mental health literacy among 153 urban and 189 rural Malaysian. Malays varying in socioeconomic status, which is congruent with present study, showed that knowledge and beliefs about depression of rural Malays were significantly poor as compared to the urban Malays.[9]

The findings of this study were incongruent with a comparative descriptive study that was conducted in South Australia to assess the rural and urban differences in depression-related mental health literacy. Subjects were randomly chosen from South Australian rural and urban young men aged between 15 and 30 years. The results showed that there was an increase in both rural and urban young male mental health literacy between 1998 and 2008, especially in rural young men.[10]

This study is also congruent with another community based cross sectional study to assess the awareness and public knowledge about the cause of depression among certain urban and rural areas of Aligarh, Uttar Pradesh. The result of the study showed that knowledge regarding the cause of depression in rural area was significantly poor as compared to the urban area.[11]

The present study showed that there is an association of the socio-demographic variables and mental health literacy of urban and rural adults. In urban area, mental health literacy was higher in the adults of age group of 31 – 40 years, male, graduates and professionals compared to other groups. Similarly in rural area, mental health literacy was higher in the adults of age group of 31 – 40 years, male, high school education, professionals and monthly income of rupees 6001 – 9000 and 9001 – 12000 compared to other groups.

A study which supports the present study finding was conducted in three cities of Punjab to assess public mental health beliefs. A total of 1750 people from all walks of life were read a vignette describing symptoms of either psychosis or major depression. The findings showed that depression was four times more likely to be diagnosed than psychosis and the education status and area of residence contributed significantly to one's ability to diagnose.[12]

The study showed consistent findings with comparative descriptive study carried out to determine the mental health literacy between the Australian lay public and the Iraqi and Sudanese refugee communities. Australian participants recognized the symptoms of specific mental disorders more than Iraqi and Sudanese participants. Both Sudanese and Iraqi participants strongly supported supernatural and religious treatment.[13]

There are other studies which show the low mental health literacy among different populations irrespective of their rural or urban backgrounds. A study which evaluated the effectiveness of a school-based mentalhealth literacy intervention on knowledge and stigma for 534 adolescents in the regional area of Ottawa, Ontario, Canada showed low pre-test knowledge scores.[14] Another study conducted on beliefs and knowledge regarding the Post-Traumatic Stress Disorder among 150 resettled Afghan refugees living in Adelaide, South Australia showed that only 31% of the respondents identified the problem depicted in the vignette as being PTSD. The study concluded the need to bridge the gap between mental health care and the knowledge and beliefs of resettled refugee populations.[15]

Conclusion

This study was a descriptive, comparative survey conducted in the rural and urban population of Mangalore. The mental health literacy of rural adults was lower compared to that of urban adults, which shows the need of educating the rural population regarding the various aspects of mental health and mental illness. The socio-demographic characteristics like age, gender, education, occupation and income have to be taken into consideration by the mental health professionals while providing education to the general population as these variables have found to be associated with mental health literacy of the urban and rural adults in this study.

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Original Article

To Study Pattern Performance of Cognitive Functions Among Cannabis and Opioid users so as to enhance Psychosocial Rehabilitation

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ABSTRACT

Background: *The brain region and neural processes that underlie addiction overlap extensively with those that support cognitive functioning, including learning, memory and reasoning. These areas include dorso-lateral prefrontal cortex and anterior cingulated cortex and drug abuse may be associated with structural & functional abnormalities of these areas leading to cognitive impairment, compromised critical skills, increased distractibility and deficits in working memory.* ***Materials & Methods:*** *The study was conducted at Dayanand Medical College and Hospital, Ludhiana, India. A total of 30 known substance dependent patients, (15 cannabis users and 15 opioid dependent patients, diagnosed as per ICD 10 criteria), both indoor as well as outdoor were evaluated for their intellectual and memory functioning using Wechsler intelligence test (verbal, Indian version which has 4 subtests ie information, digit span, arithmetic and comprehension), Alexander's Pass Along Test (to see executive function) and PGI memory test(Indian version of Wechsler memory test) and then the results were compared with the control group. Patients with any other medical disorder, head injury, seizure disorder and any pre-morbid psychiatric problem were excluded from the study.* ***Results & Discussion:*** *The protocol shows that remote memory and delayed recall subtests appear highly affected area irrespective of the type of substance abused. Mental balance and immediate recall was affected more in cannabis users as compared to opioid users. Attention and concentration was affected more in cannabis as compared to opioid users. Many studies are in the supportive evidence which shows that cannabis users have subtle deficits in learning and memory, working memory, and attention that persist even at least 6 weeks following cessation of use. Similarly among opioid users there is significant deficit in delayed recall & immediate memory. However there is a lack of studies showing head to head comparison between neurocognitive deficits due to opioids and cannabinoids.* ***Conclusion:*** *Drug related cognitive changes may bias patients towards response and action that contributes to the cycle of addiction and also hinder patient's ability to benefit from counseling. So, more sessions and reminders may be necessary for these patients in incorporating abstinence sustaining strategies into their daily routine.*

Keywords: *Cannabis use, Opiate use, Cognitive functions, Psychosocial rehabilitation*

Introduction

Recent works exploring the effects of substance abuse on the central nervous system (CNS) have demonstrated a variety of adverse effects related to mental health. In several laboratories and clinics substantial damages of brain function are seen to result from these drugs. An observation that has received special attention during recent years is that chronic drug users display pronounced impairment in brain areas associated

with executive and memory function. Chronic use of psychoactive substances is associated with widespread deficits in neuropsychological function.[1] These deficits are pronounced in the executive domains including decision making, response inhibition, verbal learning and memory.[2]

Indeed, brain areas and processes involved in drug addiction substantially overlap with those known to be of relevance for cognitive functions. Studies have indicated that abusing drugs may alter the normal structure in these regions and influence functions that induce cognitive shifts and promote continued drug use. Processes during early stages of drug abuse are suggested to promote strong maladaptive connections between use of drugs and environmental input underlying future cravings and drug-seeking behaviors. Continued drug use causes cognitive deficits that aggravate the difficulty of establishing sustained abstinence. In fact, drug addiction has been characterized as a disease of "pathological learning" by several investigators.[3] These deficits may be associated with prefrontal cortex dysfunction and their extent and nature is likely to depend upon the substance of abuse.

The prevalence of cognitive impairments in substance abusers varies from 30-80 %.[4] Cognitive impairment in such patients leads to poorer treatment outcomes including decreased treatment retention.[5,6] Unfortunately, neuropsychological assessment is typically not an aspect of patient evaluation in substance abuse treatment programme because it is time and resource consuming. Secondly, the cognitive impairment cannot be adequately identified by drug counsellors in a clinical impression or through self respect.

So, the present study was planned to understand the pattern performance of cognitive functions among cannabis and opioid users, which would help in planning long term management including treatment adherence and rehabilitation.

Aims and Objectives

As there is a lack of studies showing head to head comparison between neurocognitive deficits due to opioids & cannabinoids, so, the present study was planned to compare the pattern performance of cognitive functions among cannabis and opioid users.

Materials and Methods

The study was conducted at Dayanand Medical College and Hospital, Ludhiana, India. A total of 30 known substance dependent patients, (15 cannabis users and 15 opioid dependent patients, diagnosed as per ICD 10 criteria), both indoor as well as outdoor were evaluated for their intellectual and memory functioning using Wechsler intelligence test (verbal, Indian version which has 4 subtests i.e. information, digit span, arithmetic and comprehension), Alexander's Pass Along Test (to see executive function) and PGI memory test (Indian version of Wechsler memory test) and then the results were compared with the control group. Patients with any other medical disorder, head injury, seizure disorder and any pre-morbid psychiatric problem were excluded from the study.

Results

Table 1 shows the demographic variables of the sample. It shows that majority of the subjects are in the age group of 21-40 years age group. Also when comparing the educational level, majority of the subject were educated up to class 10th. Table 2 shows the verbal and non verbal intellectual functions of the subjects. As per this table intellectual dysfunction was found to be more in cannabinoid

Table-1. Demographic variables of the subjects

Age (in years)	Cannabis Users (N=15)	Opioid Dependents (N=15)
< 20	03	04
21-40	10	09
> 41	02	02
Educational Level		
Upto matric	10	12
Matric – Graduation	03	02
> Graduation	02	01

Table-2. Verbal and Non-Verbal Intellectual Functioning of Subjects

	Mild (50-70)		Moderate (35-49)		Severe (20-34)		Normal		Total	
	Cannabi-noids	Opioids	Cannabi-noids	Opioids	Cannabi-noids	Opioids	Cannabi-noids	Opioids	Cannabi-noids	Opioids
Information	05	02	01	01	01	01	08	11	46.67 %	26.67 %
Comprehension	06	03	04	02	02	01	03	09	80 %	40 %
Arithmetic	06	03	02	01	02	00	05	11	66.67 %	26.67 %
Digit Span	02	04	01	03	01	02	11	06	26.67 %	60 %
Performance IQ	13	10	00	00	01	02	01	03	93.33 %	80 %

users as compared to those using opioids except in digit span subtest. Table 3 shows the memory functions of the subjects. The protocol shows that remote memory and delayed recall subtests appear highly affected area irrespective of the type of substance abused. Mental balance and immediate recall was affected more in cannabis users as compared to opioid users. Attention and concentration was affected more in cannabis as compared to opioid users.

Table-3. Memory Function of Subjects

	Normal		Mild		Severe		Total (in %)	
	Cannabi-noids	Opioids	Cannabi-noids	Opioids	Cannabi-noids	Opioids	Cannabi-noids	Opioids
Remote Memory	03	03	06	07	06	05	80.00	80.00
Recent Memory	08	11	04	03	03	01	46.67	26.67
Mental Balance	02	06	04	03	09	06	86.67	60.00
Attention & Concentration	07	04	02	05	06	06	53.33	73.33
Delayed Recall	02	02	09	08	04	05	86.67	86.67
Immediate Recall	03	05	08	07	04	03	80.00	66.67
Verbal Retention of Similar Pairs	03	04	06	05	06	06	80.00	73.33
Verbal Retention of Dissimilar Pairs	04	03	03	02	08	10	73.33	80.00
Visual Retention	04	05	03	03	09	07	73.33	66.67
Recognition	07	06	03	04	05	05	53.33	60.00

Discussion

Recent works exploring the effects of abusing alcohol, central stimulants, and opiates on the central nervous system (CNS) have demonstrated a variety of adverse effects related to mental health. An observation that has received special attention during recent years is that chronic drug users display pronounced impairment in brain areas associated with executive and memory function. Our study focuses on comparing the cognitive effects of cannabinoids and opioids.

Many studies are in the supportive evidence which shows that cannabis users have subtle deficits detrimental effect on prospective memory ability in young adults but users may not be aware of these deficits. Cannabis is known to produce substantial acute effects on human cognition and visuomotor skillsas also shown in our study (cannabis 73.33 % on visual retention vs opioids 66.67%). Cannabis use impairs memory, attention, inhibitory control, executive functions and decision making, both during the period of acute intoxication and beyond, persisting for hours, days, weeks or more after the last use in learning and memory, working memory, and attention that persist even at least 6 weeks following cessation of use.[7,8] In our study the deficits in various subtests of memory function indicate that deficits are more prominent in cannabinoid users (except in Attention concentration and in Recognition subtests). Also, long-term cannabis users have impaired learning, retention, and retrieval of dictated words, and both long-term and short-term users show deficits in - time estimation,[9] same as that shown in our study. Majority of studies have suggested a significant cognitive decline in cannabis abusers compared to non-abusers and healthy controls. It is suggested that cannabis use has a

of cannabis which is in concordance with our study which shows significant deficits in information, comprehension, arithmetic and performance IQ subtests of intellectual functioning, more in cannabis users as compared to opioid users.

Similarly among opioid users there is significant deficit in delayed recall and immediate memory.[10] Also delayed and immediate recall do show impairments, but is similar for both cannabinoid and opioid users. Also, the findings of present study, depict that the patients were showing difficulty in new learning and recall as well as they fail to apply new skills, difficulty in abstract thinking, inflexible cognition and difficulty in changing the mental set.[2] Studies have shown that morphine slightly impaired both sexes' performance on a test of working memory in which they were asked to repeat a set of digits in reverse order11which is in concordance with the results of our study showing more deficits in opioid users compared to cannabis users in digit span subtest of intellectual functioning. Chronic exposure to opiates, such as heroin, morphine and to some extent also methadone are shown to impair cognitive function.[12] Heroin is linked to significant attention deficits and inadequate performance on memory tasks. Furthermore, chronic exposure to morphine is also shown to cause vigilance and attention impairments in chronic pain patients and impairs acquisition of reference memory in rats.[13]

The cortical distributions of cannabis and opiate receptors might be expected to lead to different patterns of cognitive impairment among cannabis and opiate abusers. Subcortically, cannabinoids and opiates have distinct effects in the nucleus accumbens, but share some common actions, for example, in boosting the activity of the mesolimbic dopamine system. Consequently, some similarities in the profiles of neuropsychological impairment might also result from long-term abuse of these drugs. Chronic abuse may lead to changes in neurotransmission present in DA terminals such as the nucleus accumbens, caudate-putamen, and frontal cortex, leading to disruptive functioning of cortico-striatal loops subserving cognitive and affective information processing.

The endogenous cannabinoid system is involved in regulatory neural mechanisms that modulate processes underlying a range of cognitive functions that are impaired by cannabis. Deficits in human users most likely therefore reflect neuroadaptations and altered functioning of the endogenous cannabinoid system.

However there is a lack of studies showing head to head comparison between neurocognitive deficits due to opioids & cannabinoids.

Conclusions

Drug related cognitive changes may bias patients towards response and action that contributes to the cycle of addiction and also hinder patient's ability to benefit from counseling. Cognitive deficits associated with specific parameters of cannabis and opioid use and interactions with neurodevelopment stages and neural substrates will better inform our understanding of the nature of the association between substance use and cognitive impairment.

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Original Article

Socio-Demographic Profile of Psychiatry patients seen at PHC and CHC level – DMHP experience

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ABSTRACT

Background: *Based on the two experiments at Raipur Rani in Chandigarh and Bellary district in Karnataka, a module was prepared and District Mental Health Program (DMHP) was started at a national level. With a nodal office at Department of Psychiatry, KGMC, Lucknow, Kanpur Nagar was among the first few Districts in the country where DMHP was started. The objective was to integrate the mental health services with primary health care system in order to provide them at village level. Field visit was an important component of this module.* ***Aims and Objectives:*** *(1) To determine the age, education and gender profile of outpatients attending DMHP mental health clinic at various PHC/CHC in Kanpur district (Nagar), from August 1999 to December 2008. (2) To assess the diagnostic profile of the patients seen. (3) To discuss the challenges faced by DMHP team during the field visits in the Kanpur Nagar district.* ***Results and Observations****: A total of 3502 patients were registered in 7 PHC/CHC's of Kanpur Nagar from August 1999 to December 2008. Around 400 patients were registered in every PHC/CHC. 59% of patients were suffering from some kind of depression and anxiety. Psychosis was seen in 12%, Epilepsy in 20%, Mental Retardation in 2% and Substance Use Disorder was seen in 1%.* ***Conclusion:*** *Integration of mental health activities with primary health services is still a difficult task to achieve. Extensive IEC activity is required to remove the misconceptions about mental illnesses. Starting the DMHP at national level with assigning of responsibility to the CMO's of the district as in other national health programs may be a useful step in this direction.*

Key words*: National Mental Health Program (NMHP), District Mental Health Program (DMHP), Community Health Centre (CHC), Primary Health Centre (PHC), Chief Medical Officer (CMO).*

Introduction

India is one of the first developing countries to develop and implement a National Mental Health Program. Prior to the formulation of the NMHP in 1982, there was growing recognition of the need to develop Indian models for mental health care.[1] Two experiments at Chandigarh in Raipur Rani and Bangalore in Bellary district of Karnataka demonstrated the feasibility of providing a certain level of mental health care through the existing health care systems.[2,3] Based on these two experiments a module was prepared and District Mental Health Program was started at a national level. Kanpur Nagar was among the first few districts in the country, where DMHP was started as a pilot project

with the nodal office at the Department of Psychiatry, King George Medical College, Lucknow. Under this program there was a regular outpatient clinic started at Ursala Horseman Memorial, district hospital on Monday, Wednesday and Friday. A regular outreach mental clinic covering various Primary Health Centers (PHC) and Community Health Centers (CHC) of Kanpur District (Nagar) was started on every Tuesday and Thursday. Through this article the authors wish to outline some of the initial experiences of field visits of DMHP team to various outreach clinics. We shall also attempt to provide an overview of socio-demographic profile of patients seen at these clinics in the initial years from August 1999 to December 2008.

Program History and Structure

The DMHP was started at Ursala Horseman Memorial District (UHM) Hospital, Kanpur in 1998. The Department of Psychiatry, King George Memorial College (KGMC), Lucknow was appointed as the nodal office for the program and the Head of Department of Psychiatry was designated as the Nodal Officer. The details of the initial activity of the program and patients seen as outpatient in the district hospital Kanpur has already been published.[4] In this article we are going to focus on the field visits as outreach mental health clinics in various PHC/CHC of Kanpur Nagar.

Initially in June – July 1999 the team of DMHP comprising of psychiatrist, clinical psychologist, social worker, driver and peon visited all the PHC's and CHC's of Kanpur Nagar District by the vehicle provided under DMHP. After consulting the local Medical Officer incharge of PHC's and CHC's and after talking with the staff and patients present, every months Tuesday and Thursday were fixed for outreach mental health clinic at every PHC/CHC. Local market day in the area and visit to adjacent PHC/CHC was also taken into consideration. The visits to various PHC / CHC were as per follows:

- 1st Tuesday of every month CHC Sarsaul
- 1st Thursday of every month PHC Chaubeypur
- 2nd Tuesday of every month CHC Bidhnoo
- 2nd Thursday of every month PHC Shivrajpur
- 3rd Tuesday of every month CHC Sarsaul
- 3rd Thursday of every month CHC Ghatampur
- 4thTuesday of every month CHC Bilhaur
- 4th Thursday of every month PHC Bheetargaon

Every month field visit program of DMHP team was sent to CMO, Kanpur Nagar, in advance who then forwarded the information to all Medical Officer in charges of PHC's/CHC's of the district.

Initially, at least one medical officers from all the PHC's and CHC's of Kanpur Nagar district and UHM district hospital Kanpur were called to Department of Psychiatry, KGMC, Lucknow for two weeks training. For the purpose of training, ICD 9 Diagnostic Criteria was selected. After training, these medical officers were given a one page brief history taking Performa to maintain a record for every mentally ill patient seen by them in regular outpatient duty. The doctors were asked to discuss these mentally ill patients seen by them with the DMHP psychiatrist when the team visited their PHC/CHC. This approach was started so that, not only would these trained medical officers gain confidence in diagnosing mentally ill patients but would also refresh their training skills about management of mentally ill person.[5]

The paramedical staff of PHC's/CHC's along with some local village Pradhans and NGO's working in that local area were sensitized about mental illnesses by Psychiatrist from Department of Psychiatry, KGMC, Lucknow. Mental health camps were organized at all the PHC's and CHC's to spread information about starting of mental health clinic.

The field visit by the DMHP team was a very regular affair and was missed only on National Holidays or some unavoidable circumstances. After regular visits, the DMHP team gradually developed good relations with the doctors and the local staff. The number of patients in outreach mental clinic started increasing. However it was observed that the trained doctors were reluctant to fill Patient History Performa. Similar difficulty was also faced at Raipur Rani.[6] This short one page Patient History Performa was eventually filled by the psychologist and social workers of DMHP during their visit and team started keeping records of these patients with themselves. The trained doctors were requested to keep on identifying mentally ill patients and treat them in their daily outpatient clinic and call them on the day of visit by DMHP team. They were encouraged to discuss about these mentally ill patients with the team and clear their queries and doubts and refresh their skills of managing mental

illness. It was observed that these trained medical officers had difficulty in following ICD-9 criteria of diagnosis for mental illnesses. Hence a simpler method of diagnosis was used. Similar kind of diagnostic break up has been used in community-based study in rural areas of Jharkhand.[7] After few years majority of the trained doctors under DMHP were transferred out of Kanpur District. New transferred medical officers were called for training to Department of Psychiatry, KGMC, Lucknow but due to shortage of doctor's in the district, very few were sent for training by the CMO's.

Another important effort of integrating mental health services with primary health care was done by providing medicines available under DMHP to the pharmacist in the PHC/CHC for distribution. He was asked to distribute the medicines to mentally ill patients seen by the trained doctors and keep the records with himself. Initially some pharmacists showed interest in doing this job but when asked for records they started avoiding it. Then they started distributing the medicines only on the days of the visit of mental health team of DMHP and that too if they were present and were not designated some other important work by their doctor in charge. The lack of cooperation made maintaining and checking of the distribution of medicines available under DMHP a difficult task.

In IEC activities pamphlets containing short information regarding mental illnesses and days of visit to various PHC/CHC were distributed regularly. Wall paintings under banner of DMHP, with short information regarding mental illnesses were made in all the PHC/CHC. Information about DMHP and mental illnesses were announced by mikes on rickshaws in local vernacular language.

Record of all the patients seen at PHC/CHC were maintained by the DMHP team on their day of visit. Socio-demographic profile of all the patients seen at various PHC's and CHC's is being reported in this paper. The profile of patients seen at PHC/CHC is also being compared with the patients seen by us at District Hospital level.

Objectives

- To determine the age, education and gender profile of outpatients attending DMHP mental health clinic at various PHC/CHC in Kanpur Nagar district between August 1999 to December 2008.
- To assess the diagnostic profile of the patients seen
- To discuss the challenges faced by DMHP team during the field visits in the Kanpur Nagar district

Results

Patient Attendance: A total of 3502 patients were registered in 7 PHC/CHC's of Kanpur Nagar, from August 1999 to December 2008. Around 400 mentally ill patients were registered in each and every PHC/CHC and their brief records were maintained by the visiting DMHP team. On every visit the team used to see around 10–15 mentally ill patients of which there were around 2-3 new cases registered. In PHC Bhitargaon the total number of registered patients was 568, which was much higher than any other PHC/CHC. This high number was probably due to the inconvenient location of this PHC and patients were unable to travel to city or district hospital for treatment. In CHC Sarsaul 866 patients were registered, which was again very high. DMHP team visited CHC Sarsaul twice a month with aim of making it an ideal center under DMHP. A WHO project was also running in this CHC for eighteen months for identification and treatment of Epilepsy under the Department of Psychiatry, KGMU in Lucknow by a different team.[8]

Diagnostic Profile: The data on the diagnosis of patients seen in PHC/CHC during field visit shows that more than half (59%) of patients were suffering from some kind of depression and anxiety. These patients came with the complaint of sleep disturbance, headache, abdominal discomfort or lack of interest in work and surroundings. Psychosis was seen in 12% of patients and epilepsy was seen in 20% of total registered patients. Mental Retardation was seen in 2% of patients, substance use disorder was seen in 1% and 7% others were suffering from OCD, conversion reaction, adjustment disorders or personality disorder.

In CHC Sarsaul, there was a WHO project on Epilepsy, for identification and treatment by a separate team under the Department of Psychiatry, KGMC, Lucknow. Due to this reason a good number of patients (406 out of total of 866 patients registered) were identified and treated for Epilepsy. These patients were provided with anti-epileptic

Table: Showing Details of Patients Seen at PHC/CHC

Provisional Diagnosis of PHC /CHC Patients, from August, 1999 – December, 2008

Provisional Diagnosis	Shivraj-pur	Sarsaul	Chaubey-pur	Ghatam-pur	Bilhaur	Bidhnoo	Bhitargaon	Total	%age
Depression and Anxiety	263	319	241	213	301	319	413	2069	59%
Psychosis	62	92	59	82	48	40	30	413	12%
Subst. Use Disorder	2	2	9	0	5	2	5	25	1%
Epilepsy	41	406	63	48	32	45	62	697	20%
M.R.	10	12	13	8	7	10	10	70	2%
Others	22	35	34	42	24	23	48	228	7%
Total	**400**	**866**	**419**	**393**	**417**	**439**	**568**	**3502**	**100%**
Sex Wise									
Male	176	495	194	210	202	204	225	1706	49%
Female	224	371	225	183	215	235	343	1796	51%
Total	**400**	**866**	**419**	**393**	**417**	**439**	**568**	**3502**	**100%**
Education Wise									
Illiterate	134	292	147	125	146	146	234	1224	35%
Up to 5th	56	131	69	46	38	55	86	481	14%
6th to 10th	131	330	125	112	137	166	155	1156	33%
11th to graduate	66	96	63	97	85	66	82	555	16%
Above graduate	13	17	15	13	11	6	11	86	2%
Total	**400**	**866**	**419**	**393**	**417**	**439**	**568**	**3502**	**100%**
Age group wise									
0 to 10	13	68	28	8	11	10	33	171	5%
11 to 20	68	265	79	78	84	101	86	761	22%
21 to 30	103	231	84	120	108	99	159	904	26%
31 to 40	114	167	99	91	104	117	134	826	24%
41 to 50	54	69	75	48	51	63	77	437	12%
51 to 60	32	36	25	22	31	35	37	218	6%
Above 60	16	30	29	26	28	14	42	185	5%
Total	**400**	**866**	**419**	**393**	**417**	**439**	**568**	**3502**	**100%**

drugs on regular basis by WHO project as well as by DMHP.

Gender and Age: Out of total of 3502 patients registered under DMHP, during the field visit to various PHC'/CHC's in the district, 49% were males and 51% females. Only in two CHC's Sarsaul and Ghatampur males outnumbered females in attendance.

Data in the distribution of age groups of the patients registered during the field visit in various CHC/PHC in this period shows that 50% of the patients were in the age group of 20–40 years. Below 10 years and above 60 years there were just 5% of patients in each group. 22% of patients were in the age group of 11 to 20 years and 18% of patients were in the group of 40–60 years age group.

Education: The data on educational qualification during this period of field visit registration shows that almost 1/3rd of rural population was illiterate and almost 1/3rd had an education qualification between 6th to 10th class. 16% of patients were in the educational group of 11th to graduate and only 2% of the patients were educated above graduation level. 14% of patients were educated upto 5th class.

Discussion

Primary health care services in our country are in a poor state9. It has been assessed that regarding health services in our country "no meaningful service is available for 450 million rural populations".10 From August 1999 to December 2008, during regular field visits by DMHP team to the 7 PHC/CHC in the Kanpur Nagar district around 400 patients were

registered in each and every CHC/PHC. As has been seen in Billary Pilot Project and Roop Rani Experience, there were serious difficulties in accomplishing the local health staff's help in taking over of task activities of DMHP. Number of patients identified by health staff was quite low, and very few patients were referred to visiting DMHP team for opinion. This suggests poor cooperation by the staff probably due to heavy workload of other national programs, for which they have to send a monthly report. It might also be due to limited public acceptability of mental illness or inadequate training and lack of interest in these health workers. It has been observed in the rural community that villagers spent a significant proportion of time in appeasing supernatural agents considered etiological to a range of misfortunes,[11] and hence avoid treatment for mental illnesses.

59% of the patients were diagnosed as suffering from depression and anxiety. It has been observed that prevalence rate of Common Mental Disorders (CMD), which are neurotic disorders presenting with anxiety & depression symptoms come in a range from 2-57%.[12] Similar results were observed in DMHP project at Sitapur among patients seen at CHC's over a period of 3 years.[13] Similar observations were made in the district hospital under DMHP during this period, among patients suffering from CMD. It has been seen that depression & anxiety are the most prevalent disorder among mental illnesses and patient diagnosed with this, normally attach significant importance to somatic complaint like pain and aches, bodily heat and cold.[14]

In the epidemiological findings on prevalence of mental disorders in India it has been seen that prevalence of mental retardation (MR) is 5.3 per 1000.[14] In data based on these field visits, 2% of patient were diagnosed as suffering from MR and were advised to come to district hospital and get IQ tested. They were subsequently helped in getting disability certificate issued from CMO. In DMHP Sitapur out of 82 new patients seen at CHC's, 4 patient were suffering from MR. In the data of our district hospital, where CMO of Kanpur Nagar and CMO's of adjoining districts were referring patients for IQ check up and disability certification, we saw 9.68% of MR patients, from the total number of registered patients in mental health outpatient department.

Twelve percent of total patients seen at mental health clinics PHCs/CHCs in Kanpur District were suffering from psychosis, which was slightly lower than that seen at district hospital mental health outpatient clinic (15.93%). In Raipur Rani Experience there were a significant higher number of patients suffering from psychosis (42.7%). The doctors and health staff were having reasonably good knowledge about epilepsy and psychosis, still we saw very few psychotic patients at CHC/ PHC. This can be attributed to availability of good number of psychiatrists in the Kanpur city and the faith of patients and their family member's in them for getting better treatment. A good number of these patients were getting treatment at Agra or Lucknow, as these cities have a well established mental health services for many years.

Twenty percent of patients seen at CHC's were suffering from Epilepsy. Almost similar pattern of patients were seen in DMHP Sitapur. Important thing to note is, that this data was obtained, when a house to house survey was done in CHC Sarsaul for epilepsy patients and the number of patients increased significantly and these patients maintained a good regular follow up till they got medicines regularly under the WHO project. So, this factor highlights one more issue that if a house to house survey is done for one particular illness and patients are provided with regular free medicines, not only the attendance of patients will increase but treatment gap will also decrease significantly. In Raipur Rani Experience 16.6% of epileptic patients were seen which was almost same to data seen at district hospital Kanpur under DMHP.

Fifty percent of the patients seen in mental health clinic were in the age group of 20 – 40 years. High prevalence of disability in the productive age group of 20 – 24 years and 30 – 34 years has been reported.[7] The cause of this finding may be the high level of stress during this age group of job, mental and family problem, substance abuse, socio economic problems. In all CHC's except two, there were slightly more female patients seen 51% against 49% male. This was the opposite of what we had seen, in similar period in the district hospital, with males 51.92% and female 48.08%. Higher prevalence of mental disability has been seen among males (67.9%) than among females (32.1%).[7]

Kanpur Nagar is an industrial city and one of

the highest revenue earning city of the state. Data observed demonstrated that 1/3rd of the patients were illiterate both at CHC's and District Hospital level. Almost similar observation was made at DMHP Sitapur in Uttar Pradesh; about 1/3rd studied till 10th class.

To summarize the findings and experience of DMHP in the field over a period of about 10 years, we would like to comment that -

- There are serious difficulties in convincing the local health staff to take over the tasks and activities of DMHP. Hence true integration of mental health with primary health care is still a difficult task to achieve.
- There are sufficient number of mentally ill who are willing to take treatment but have difficulty in reaching even the nearby primary health center.
- Treatment gap can be significantly reduced in any mental illness by extensive house to house survey, IEC activities, proper training of doctors, paramedical staff and local faith healers and by providing medicines at PHC/ CHC level.
- As has been suggested in DMHP and by many others, there is an urgent need for proper IEC activities as villagers still spent a significant time in appeasing supernatural agents as they consider them as etiological to their misfortune of mental illness.[15]
- In field visits it is difficult for a single mental health team to cover whole of the district.
- "The Pill" as has been highlighted does have a significant effect on the attendance of patient in outreach mental health clinic.[16]
- As has been noted before we agree that poverty, negative attitudes towards mental health treatment and traditional values often result in low utilization rate of mental health facilities.[17]

Conclusion

In order to provide mental health services to population residing in rural areas, a national level program – 'National Mental Health Program' should be launched. The program should cover whole of the country. Chief Medical Officer (CMO) should be made responsible for implementation of this program. Multiple modules of mental health care will be required. Community participation will be a key to success of the program. IEC activities with intense media campaigning will not only help in community participation but will also help in reducing the stigma attached to mental illness. Regular supply of medicine under the program is also essential. A shortage of trained mental health staff was felt at all levels of state run health care system. To overcome this shortage participation of NGOs and private organizations should be explored.

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Original Article

Pattern of Bender Gestalt Test Performance in Schizophrenia, OCD and Normal Groups

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ABSTRACT

Introduction: *In clinical practice it is often seen that patients afflicted with OCD also exhibit psychosis like symptoms, making their diagnosis and treatment difficult. Since Bender Gestalt Test plays a demarcating role in assessing neurotic and psychotic disorders, this study was undertaken to see the different patterns of their performance on BGT. Further, if such differences would exist they may be helpful in diagnostic and management purposes.* ***Objective:*** *The study was conducted to compare the performance on Bender Gestalt Tests of schizophrenia, OCD, and normal groups.* ***Method:*** *The study was conducted at the Post-Graduate Institute of Behavioral and Medical Sciences, Raipur (C.G.). Purposive sampling was used to select 20 schizophrenia and 20 OCD patients from the outpatient department of the institute, and 20 normal participants of both sexes were taken from the general population using inclusion and exclusion criteria. A performa specially designed for the study was used to record socio-demographic details, and Bender Gestalt Test (BGT) was used for assessment.* ***Results:*** *The three groups differed significantly with respect to their income and domicile only. The majority of Schizophrenia patients (85%) belonged to the rural background, while the majority of OCD (65%) and normal group participants (55%) were from urban background. The difference in scores of all the groups on BGT was statistically significant. Schizophrenia patients performed poorly than normal and OCD patients, while OCD patients performed worse than the normal group.*

Keywords: *Schizophrenia, OCD, Bender Gestalt Test*

Introduction

Schizophrenia and OCD are amongst the commonest of psychotic and neurotic disorders. Much of the distress and problems faced by the afflicted patients in their social, work and family settings may be due to the debilitating cognitive impairments that accompany these disorders. In schizophrenia, dysfunctioning of the frontal lobes involving prefrontal cortex, basal ganglia and cerebellum is associated with deficits in visuoperceptual ability, whereas in OCD, increased activity in the frontal lobe, basal ganglia and cingulum is seen to result in deficient visuospatial ability.[1] Thus, disturbances in several brain areas associated with these disorders may manifest as different cognitive deficits and impairments.

Cognitive deficits entail problems in perception attention, memory and problem solving.[2] The adequacy of cognition may be assessed via specific functions such as orientation, ability to learn necessary skills, problem solving, abstract thinking, reasoning, making judgments, the ability to retain and recall events, mathematical ability and other forms of symbol manipulation, control over primitive reactions and behavior, language use and

comprehension, attention, perception and praxis (Campbell, 2004).[3]

Cognitive Impairments in Schizophrenia

Cognitive impairment is universal in schizophrenia and covers varied domains including attention, visuo-perception and memory, and executive functions.

Attentional Impairment: Deficits in attention and information processing might be central to schizophrenia as these can contribute to problems with executive functioning and working memory.[4] These are seen as and vulnerability markers during remission[5] among children of patients with schizophrenia[6] and those with schizotypal personality.[7] There is also a strong association between attention deficits and deficit syndrome,[8] while distractibility has been linked with the severity of formal thought disorder.[9]

Neuropsychological studies indicate several attentional deficits among patients with Schizophrenia. Schizophrenia patients perform worse than bipolar and normal subjects on tests of sustained attention,[10,11] and worse than normal subjects on executive network, orienting network and overall reaction time (RT).[12] More specifically, a higher degree of slowing among patients has been reported on tasks requiring selective attention and inhibition, followed by lexical tasks.[13,14] Patients also demonstrate greater distractibility even when they are stabilized with medication, or even when they are off medication.[15] Further, when compared with controls, patients also have problems with cognitive set-shifting, though patients with higher IQ may perform better, the deficits are marked nonetheless.[16] Thus, attentional deficits pertaining to selective attention, attention switching, set-shifting, and distractibility seem common to schizophrenia patients implying frontal lobe impairment.

Memory Impairment: As compared to normals, schizophrenia patients show memory impairments of immediate memory, long term memory, non-strategic memory, and working memory (transient type and executive function) which may hinder cognitive performance on language comprehension, learning and reasoning.[17-19] Patients' ability to encode may be compromised leading to poor recognition.[20] Concurrently, mild severity has been associated with poor encoding but not recall, while severe disturbances have been linked with post encoding recall deficit.[21] Many studies comparing verbal with visual memory in patients with schizophrenia have found comparable deficits in both modalities,[22] while deficits in verbal memory (short and long term) persist across IQ levels.[23]

Executive Functioning Impairment: Schizophrenia patients show poor performance of on neuropsychological tests indicating deficits in contextual processing, planning ability and strategy, self-monitoring, and problem solving ability.[24 - 27] Neuropsychological investigations on patients also point towards frontal lobe abnormality, left hemisphere impairment and inter-hemispheric transfer deficits.[28]

Neuropsychological Studies

Cognitive Impairments in OCD

Visuospatial and visuoconstructional deficits and impairments in memory and executive function are common in patients with OCD.

Visuospatial deficits: Visuospatial deficits among OCD patients have been consistently reported in literature,[29] which may manifest as inadequate skills to perceive and manipulate objects in two and three dimensional spaces.[30] These and other impairments in OCD have been attributed to right temporoparietal, and frontal-striatal dysfunctions.[31,32]

Memory impairments: Ample evidence suggests that non-verbal memory impairment is common among OCD patients.[33] Many studies indicate that encoding and retrieval are impaired in OCD while storage remains intact.[34] Consequently, the ability to learn and recall new visual objects and images may be hampered in OCD patients. Further, the deficits observed in the implicit memory domain of procedural learning in dual task conditions are consistent with frontal-striatal system dysfunction.[35]

Executive functions: OCD patients show impairments in cognitive set-shifting which hampers their ability to change strategies when the rules for successful performance on a task also change.[36] Impaired performance on neuropsychological tasks assessing memory and attention have been reported, which may lead to difficulty in inhibiting immediate but in appropriate responses.[37] Moreover, deficits in selective attention seem to prevent patients from

disregarding irrelevant stimuli leading them to become overwhelmed by information.[38]

Schizophrenia and OCD are debilitating conditions requiring accurate diagnosis for meting out suitable and timely treatment. However, sometimes OCD patients may present with psychosis like symptoms during clinical assessment, thus impeding precise diagnosis. Such ambiguity may not only put pressure on available resources but increase the risk of misdiagnoses. Since, cognitive impairment is commonly found in both OCD and schizophrenia patients as reviewed, this study investigated if differential patterns of cognitive impairment can be observed in patients afflicted with the two disorders. If so, such information could aid in proper diagnoses and management of OCD and Schizophrenia.

Method

Sample

The study was conducted at the Post-Graduate Institute of behavioral and Medical Sciences, Raipur (C.G.). Purposive sampling was used to select 20 schizophrenia and 20 OCD patients from the outpatient department of the institute, and 20 normal participants of both sexes were taken from the general population using inclusion and exclusion criteria.

Inclusion criteria

Schizophrenia patients: (a) Age between 15 – 50 years (b) Diagnosed cases of schizophrenia as per ICD-10 criteria (c) Literate (d) Who consented to participate.

OCD patients: (a) Age between 15 – 50 years (b) Diagnosed cases of OCD as per ICD-10 criteria (c) Literate (d) Who consented to participate.

Normal participants: (a) Persons (15-50 years) from general population (b) Who consented to participate.

Exclusion criteria

Schizophrenia patients: (a) Co-morbid psychiatric illness (b) History of neurological disorder/head injury (c) Eyesight problem (d) History of substance abuse.

OCD patients: (a) Co-morbid psychiatric illness (b) Major medical illness, organic mental disorder or substance abuse problems (c) Moderate to severe depression (d) obsessive-compulsive personality disorder or spectrum disorder.

Normal participants: (a) Substance abuse related problems, mental retardation (b) Psychiatric illness (c) History of neurological disorder/ significant head injury.

Measures

1. ***Sociodemographic and Clinical data Sheet:*** A performa specially designed for the study was used to record socio-demographic and clinical details such as age, sex, marital status, history of the illness, treatment, etc.
2. ***Bender Gestalt Test (BGT):*** Neuropsychologists have extensively used BGT as a screening device for neurological impairment pertaining to visuoconstructive abilities. It consists of nine simple designs, each of which is presented to a subject who is instructed to copy them on an 8.5-by-11 inch blank sheet of paper. The scoring procedure involves orientation of designs on the page as well as deviation. Except design A which is not scored each design is inspected to determine whether not scorable deviation occur. In the present study one of the earliest and the most widely accepted scoring system for adults developed by Pascal and Suttell[39] was used.

Procedure

The patients of schizophrenia (20) and OCD (20), and normal subjects were selected using the inclusion and exclusion criteria. After which personal and clinical details of participants of all the groups were gathered using semi-structured socio-demographic data sheet. Finally, the Bender Gestalt Test was administered to them using the method developed by Pascal and Suttell.

Statistical Analysis

The data collected were analyzed using the statistical package for the social sciences (SPSS) Version 17. Chi-square tests, F tests and T tests were used to analyze data and interpret the results.

Results

As shown in Table 1a, chi-square test did not reveal any significant difference among the groups

which were matched with respect to age, sex and gender. A comparison of the socio-demographics of the three groups revealed that all groups differed significantly with respect to their income ($\chi^2 = 17.39$, df = 2, $p < 0.001$) and domicile ($\chi^2 = 11.31$, df = 2, $p < 0.003$) only (Table 1b). Likewise, the majority of Schizophrenia patients (85%) belonged to the rural background, while the majority of OCD (65%) and normal group participants (55%) were from urban background.

The majority of schizophrenia patients (50%) were from the income group of 'upto Rs. 5000 pm,' while most of (OCD) patients (60%) were from the group having income from Rs. 5001 to 10,000 pm. However, the majority from the normal group had incomes above Rs. 10,000.

Further, no differences were found between the clinical details of the schizophrenia and OCD patients with respect to age of onset, duration of illness, duration of present episode, and duration of treatment for the present episode (Table 2).

Table 3 shows that the difference in scores of all the groups was statistically significant ($p < .01$). Post- hoc analysis showed that schizophrenia

Table – 1a: Sociodemographic and personal details of Schizophrenia, OCD & Normal groups.

Variables		Groups			F-ratio / χ^2	Significance
		Schizophrenia	OCD	Normal		
		n (%) Mean (±SD)	n (%) Mean (± SD)	n (%) Mean (± SD)		
Age		31.80 (± 10.53)	30.90 (± 9.23.)	29.60 (± 9.3)	.26	.772
Sex	Male	10 (50%)	10 (50%)	10 (50%)	1.00	1.00
	Female	10 (50%)	10 (50%)	10 (50%)		
Handedness	Right	16 (50%)	18 (50%)	17 (50%)	.37	.331
	Left	4 (50%)	2 (50%)	3 (50%)		

Table – 1b: Comparison of Socio-demographic Characteristics of Schizophrenia, OCD and Normal groups.

Variables		Groups			F-ratio / χ^2	Significance
		Schizophrenia	OCD	Normal		
		n (%)	n (%)	n (%)		
Marital Status	Unmarried	8 (40%)	9 (45%)	10 (50%)	.40	.817
	Married	12 (60%)	11 (55%)	10 (50%)		
Occupation	Service/Business	5 (25%)	8 (40%)	8 (50%)	13.63	.190
	Farmer	8 (40%)	8 (40%)	8 (40%)		
	Housewife	8 (40%)	8 (40%)	8 (40%)		
	Student	8 (40%)	8 (40%)	8 (40%)		
	Not Working	8 (40%)	8 (40%)	8 (40%)		
Income	Upto Rs. 5000/- pm	10 (50%)	3 (15%)	2 (10%)	17.97	0.001**
	Rs. 5001 to 10,000 pm	6 (30%)	12 (60%)	5 (25%)		
	More than Rs. 10,000/- pm	4 (20%)	5 (25%)	13 (65%)		
Domicile	Rural	17 (85%)	7 (35%)	9 (45%)	11.31	.003**
	Urban	3 (15%)	13 (65%)	11 (55%)		
Type of Family	Nuclear	9 (45%)	14 (70%)	13 (65%)	2.91	.293
	Joint	11 (55%)	6 (30%)	7 (35%)		

patients performed poorly than normal and OCD patients, while OCD patients performed worse than the normal group.

Table 4 shows how the performance of Schizophrenia patients, OCD patients and normals differed on each of the designs of BGT. Statistically significant differences were obtained between the three groups for all BGT designs except Design 1. Post-hoc analysis revealed that schizophrenia patients obtained scores higher than OCD patients and normals for designs 2, 3, 4, 5, 6, 7, 8 and configuration design indicating a higher cognitive impairment in schizophrenia can that of OCD patients and normals.

Discussion

This study assessed to similarities and differences in the BGT profiles of schizophrenia and

Table – 2: Clinical details of Schizophrenia & OCD patients

Variables	Group		t – ratio	Significance
	Schizophrenia Mean ± SD	OCD Mean ± SD		
Age of onset (years)	29.90 ± 9.99	31.10 ± 10.75	.36	.71
Duration of illness (years)	2.39 ± 3.35	1.68 ±2.37	.77	.44
Duration of present episode	0.22 ± 0.65	0.77 ± 1.52	1.45	.15
Duration of treatment for present episode	.47 ± 1.46	.20 ± .46	.80	.42

Table – 3: Comparison of Z scores of Schizophrenia, OCD and Normal groups on BGT.

Variable	Group			F-ratio	Post Hoc Test
	Schizophrenia	OCD	Normal		
	(N = 20) Mean ± SD	(N = 20) Mean ± SD	(N = 20) Mean ± SD		
Total Z score	77.70 ± 17.95	50.05 ± 24.08	28.70 ± 24.24	24.29**	a > b**, c**, b > c**

a = Schizophrenia, b = OCD, c = normal level, **P <.01 level, ***P < .001 level, NS = Not Significant

Table – 4: Comparison of BGT performance of Schizophrenia, OCD and Normal groups on Designs 1-9

Variable			Group	F-ratio	Post Hoc Test
	Schizophrenia	OCD	Normal		
	(N = 20) Mean ± SD	(N = 20) Mean ± SD	(N = 20) Mean ± SD		
Design 1	2.35 ± 2.15	1.35 ± 1.72	1.66 ± 1.84	2.135	NS
Design 2	3.50 ± 1.87	1.75 ± 1.71	0.95 ± 1.29	12.781**	a > b**, c**
Design 3	3.80 ± 3.22	2.05 ± 1.95	0.85 ± 2.01	7.237**	a > c**
Design 4	5.45 ± 4.66	1.55 ± 2.56	0.35 ± 0.74	14.779**	a > b**, c
Design 5	5.25 ± 2.44	3.70 ± 2.40	2.10 ± 2.88	7.40**	a > c**
Design 6	5.40 ± 3.20	2.75 ± 2.65	1.05 ± 1.66	14.36**	a > b**, c**
Design 7	4.90 ± .94	2.35 ± 2.18	0.35 ± 1.08	14.50**	a > b**, b > c**
Design 8	6.20 ± 4.11	4.40 ± 2.45	1.05 ± 1.87	15.48**	a > b**, b > c**
Configuration	5.20 ± 5.31	2.30 ± 3.11	0.35 ± 1.18	9.07**	a > b**, c**

a = Schizophrenia, b = OCD, c = Normal *P < .05 level, **P < .01 level, ***P < .001 level, NS = Not Significant

OCD patients as compared to normals. The three groups were matched with respect to age, sex and handedness to avoid any extraneous influence on their BGT performance. However, while the groups were relatively homogeneous, there were differences in terms of the income groups from where the majority of patients came. Schizophrenia patients came from the lowest income groups of upto Rs. 5000, the majority of OCD patients belonged to the group with incomes ranging from 5001- 10,000 pm, and normals belonged to groups having income more than 10,000 pm. This is consistent with earlier findings, wherein schizophrenia has been found to be over-represented in socially deprived households.[40]

The overall BGT findings suggest that schizophrenia patients performed consistently poorly than both OCD patients and normals on all the designs. The findings of greater impairment are in accordance with the results of prior studies suggesting that schizophrenia patients have difficulty in planning, abstraction and spatial organization as compared to normal controls,[41] and that impaired sustained attention might be a more enduring deficit in schizophrenia.[42]

Poor performance of OCD patients may be attributed to their attentional deficits, and they may not be able to disregard irrelevant stimuli and may become overwhelmed by information.[43] Visuospatial and visuoconstructional deficits are among the most consistent findings in nuropsychological assessment studies of patients with OCD.[44,45] Also, frontal-striatal dysfunctional resulting in impairment of executive systems may impair multiple domains in OCD patients including visuospatial abilities.[46]

Thus, it is evident that BGT can be used to differentiate patient groups of schizophrenia and OCD from normals successfully. The impairment of schizophrenia is severe than that in OCD patients. The range of Z-scores can be obtained for differentiating all the groups (schizophrenia, OCD and normals). Roughly normals come under the range of four to twenty-six z-scores. The range of schizophrenia and OCD is seventy-four to ninety-six and fifty-two to sixty respectively. However, further studies using larger samples and methodology which factors in other factors such as severity of illness are needed to authenticate these findings.

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Original Article

Attitudes towards Lesbians and Gay Men among Mental Health Professionals and trainees

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ABSTRACT

Background: *The attitudes of mental health professionals towards gay and lesbians can influence their willingness to provide these individuals with adequate psycho social intervention and care.* ***Aim:*** *The aim of the present study is to assess the attitudes of mental health professionals and trainees towards lesbians and gay men.* ***Methodology:*** *The present study was a cross sectional descriptive research design. The study was conducted at Lokopriya Gopinath Bordoloi Regional Institute of Mental Health, Tezpur, Assam. The mental health professionals and trainees of LGB Regional Institute of Mental health was the sample of the study. The survey initially included 90 participants out of which 23 did not participated in the study. The total number of participants included in the analysis was fifty seven [57]. Socio demographic data sheet, The Attitudes toward Lesbians and Gay Men [ATLG] Scale and Attitude Functions Inventory [AFI] were administered.* ***Results:*** *The mean age of the respondents was 29.6 years. In the present study majority of the respondents disagree that lesbians just can't fit into our society [61%], disagree that female homosexuality is a sin [54%], is an inferior form of sexuality [63.2%], majority of the respondents disagree that the growing number of lesbians indicates a decline in Indian society [52%], whereas as majority of the respondents agree that a women's homosexuality should not be a cause for discrimination in any situation [59%].Majority of the respondents [57%] disagree that male homosexuals are disgusting, disagree that they should not be allowed to teach in school [64%], disagree that they should do everything to overcome from homosexuality [59.6%], disagree that homosexual behavior between two men is just plain wrong [56%], agree that homosexuality is merely a different kind of lifestyle that should not be condemned [52%]. Attitude towards lesbian/gay scale has a significant positive correlation with attitude function inventory for attitude towards lesbian/gay target [$r = .336$, $p < 0.05$].* ***Conclusions:*** *To our knowledge, this has been the first study in north east India which provides information on attitudes of mental health professionals towards homosexuality. Thus from the present study it can be concluded that mental health professional and trainees are having positive attitudes towards gays and lesbians.*

Key words: *Lesbians and Gay, Attitudes, Mental health professional.*

Introduction

In India, the National Aids Control Organizations Expert Group on high risk groups says that there are 25 lakhs males having sex with males. But if the most conservative western estimate of 2% is taken, and extrapolated on the Indian population in the assumption that gayness is universal, the Indian gay community — including men and women — would at least be over 20 million strong. At the upper end of 13%, it would be as large as the

country's largest minority community.[1] On 11 December 2013, homosexuality was criminalized in India by Supreme Court by a Supreme Court ruling. Gay men and lesbian women have long been the targets of discrimination and prejudice. Despite shifts toward greater acceptance in public opinion and policy, lesbian, gay, and bisexual people remain widely stigmatized.[2,3] There are very few studies in India that have seen the attitude of mental health professionals and trainees towards homosexuality (Lesbian/gay).

Dunjiæ-Kostiæ et al[4] evaluated the medical professionals' knowledge about homosexuality and their attitudes towards it. The subjects who knew more about homosexuality tended to hold less stigmatizing attitude. Age group, specialty (psychiatry, gynecology, internal medicine and surgery), and student's/physician's status had no effect on stigmatization. Chapman et al[5] found that knowledge and attitudes about homosexuality were significantly associated with students' race, political voting behavior, religious beliefs and having a friend who is openly lesbian, gay, bisexual and transgender. Kabir et al[6] in a study found that few respondents expressed negative attitudes toward gay men or would deny them civil rights. More negative responses were seen with respect to aspects of intimate behavior and homosexuality as a natural form of sexual expression. Grabovac et al[7] investigated medical student's attitude towards homosexuality and it was found to be negative. Yen et al[8] explores different dimensions of the attitudes toward gay men and lesbians among nurses in southern Taiwan and most of the participants has negative attitude toward homosexuality in the 'contact' and 'stereotypes' dimensions, followed by the 'morality' dimension and then the 'condemnation/ tolerance' dimension. Further, Röndahl et al[9] investigated the attitudes of nurses towards lesbians and gay men and nurses beliefs about the causes of homosexuality. In general, participants expressed positive attitudes (62%). Nurses expressed the most positive attitudes, whereas the assistant nursing students expressed the least positive attitudes. Arnold et al[10] assessed the attitudes of health-care professionals and medical students towards male and female homosexuality. It was found that attitudes were predominantly positive among the respondents. Similarly in a study conducted by Banwari et al[11] on medical professionals' attitude towards homosexuals it was found that they had inadequate knowledge about homosexuality, although they endorsed a neutral stance insofar as their attitude towards homosexuals is concerned. Females had more positive attitudes towards homosexuals.

A high number of studies indicate that gay and lesbians population are at higher risk of developing mental disorders.[12-14] In order to reduce these risks, there is need to improve attitudes and knowledge, raise the awareness and improve the quality of health care of lesbian and gay people. No published literature could be found investigating mental health professional attitude towards lesbian, gay and bisexual in India. Thus it is very important to get an understanding into the attitudes of mental health professionals and trainees towards these marginalized population. Attitudes of health professionals can influence the willingness to provide help to homosexual patients,[8] and consequently the quality of health care and treatment.

Aim: The aim of the present study is to assess the attitude of mental health professional towards homosexuality (Lesbian/gay)

Objectives:

1. To see the attitude of mental health professionals and trainees towards homosexuality (Lesbian/gay)
2. To find out the attitude function of mental health professionals and trainees towards homosexuality (Lesbian/gay)

Methodology

The present study was a cross sectional descriptive research design. The study was conducted at LGBRIMH [Lokopriya Gopinath Bordoloi Regional Institute of Mental Health, Tezpur, Assam]. Mental health professionals and trainees of LGB Regional Institute of Mental Health was the sample of the study. The survey initially included 90 participants out of which 23 did not participated in the study. The total number of participants/ questionnaires included in the analysis was 57. The respondents were assured confidentiality; informed consent was taken from the respondents. The participants were clearly explained the purpose of the study. The study was passed by the scientific and ethic committee of the institution. The period of

data collections was August and September, 2014.

Tools

Socio demographic profile: Semi-structured Performa that contained details of demographical information like sex, religion, education, caste and community.

The Attitudes toward Lesbians and Gay Men (ATLG) Scale: The Attitudes toward Lesbians and Gay Menscale is a brief measure of heterosexuals' attitudes toward gay men and lesbians. The scale consisted of 20 different statements, 10 about gay men (ATG subscale) and 10 about lesbians (ATL subscale), to which respondents indicated their level of agreement or disagreement. The ATLG subscales have high levels of internal consistency. When self-administered, alpha >.85 with most college student samples and alpha >.80 with most nonstudent adult samples. Test-retest reliability (rs >.80) has been demonstrated with alternate forms.[16,17]

Attitude Functions Inventory (AFI), Herek[18]: The AFI is a ten item paper and pencil instrument which yields scores on four scales representing the categories of attitude function posited by Herek (1986) experiential-schematic (function: organizing world based on past experience), (b) social-expressive (function: expressing group membership/solidarity via expression of attitudes), (c) defensive (function: relief of intrapsychic anxiety by externalizing conflict and expressing attitudes toward it), and (d) value-expressive (function: attitudes expresses values important to self-concept). Respondents reply on a nine-point Likert scale (1 = not at all true of me, 5 = true of me, 9 = very true of me). Across the four attitude topics, alpha coefficients ranged from .41 to .62 for the social-expressive items, .53 to .61 for the value expressive items, .72 to .82 for the defensive items, and .67 to .82 for the experiential-schematic items.

Results

Table-1. Mean age of the respondents

Variables	Mean	SD
Age	29.26	7.78

The mean age of the respondents is 29.26 (standard deviation = 7.78) years (Table 1).

Table-2. Socio demographic profile of the respondents

Variables		N=57	Percentage
Group	Psychiatrist	17	29.8
	Psychiatric Social Worker	7	12.3
	Clinical Psychologist	6	10.5
	Psychiatric Nursing	27	47.4
Sex	Male	20	35.1
	Female	37	64.9
Religion	Hindu	37	64.9
	Christian	9	15.8
	Muslim	6	10.5
	Other	5	8.8
Education	Graduate	7	12.3
	Post Graduate	39	68.4
	MPhil	9	15.8
	PhD	1	1.8
	PDF	1	1.8
Caste	General	25	43.9
	OBC	19	33.3
	ST	10	17.5
	SC	3	5.3
Community			
	Rural	12	21.1
	Urban	30	52.6
	Semi Urban	15	26.4
Case Seen counter			
	Yes	26	45.6
	No	31	54.4

The above table shows that majority of the respondents belong form psychiatric nursing profession (47.4%), followed by psychiatrist (29.8%), psychiatric social worker (12.3%) and clinical psychologist (10.5). Majority of the respondents were female (64.9%), belong to Hindu Religion (64.9%); educated up to post graduate level (68.4), belong to general caste (43%) and hailing from urban community (52.6%). About (45.6%) respondents had encountered homosexual cases in their clinical practice (Table 2).

Table: 3 Experience in mental health field

Variables	Mean	SD
Experience in mental health field	4.02	4.97

The above table shows the mean experience in mental health field is 4.02, and standard deviation is 4.97 (Table 3).

In the present research majority of the respondents not at all have opinions based on whether or not someone they care about is gay (56%), not at all have opinions based on their

Table-4. Attitude function inventory for attitude towards Lesbian/Gay Target

Sl. No.		Question		N=57
		Very True (%)	Neutral (%)	Not at all (%)
1	My opinions about gay men and lesbians mainly are based on whether or not someone I care about is gay.	9 (15.8)	16 (28.1)	32 (56.1)
2	My opinions about gay men and lesbians mainly are based on my personal experiences with specific gay persons.	7 (12.3)	16 (28.1)	34 (59.6)
3	My opinions about gay men and lesbians mainly are based on my own judgment of how likely it is that I will interact with gay people in any significant way.	27 (47.4)	15 (26.3)	15 (26.3)
4	My opinions about gay men and lesbians mainly are based on my personal experiences with people who family members or friends are gay.	7 (12.3)	13 (22.8)	37 (64.9)
5	My opinions about gay men and lesbians mainly are based on my perceptions of how the people I care about have responded to gay eople as a group.	8 (14.0)	21 (36.8)	28 (49.1)
6	My opinions about gay men and lesbians mainly are based on learning how gay people are viewed by the people whose opinions I most respect.	11 (19.3)	19 (33.3)	27 (47.4)
7	My opinions about gay men and lesbians mainly are based on the fact that I would rather not think about homosexuality or gay people.	17 (29.8)	14 (24.6)	26 (45.6)
8	My opinions about gay men and lesbians mainly are based on my personal feelings of discomfort or revulsion at homosexuality.	20 (35.1)	14 (24.6)	23 (40.4)
9	My opinions about gay men and lesbians mainly are based on my concern that we safeguard the civil liberties of all people in our society.	36 (63.2)	18 (31.6)	3 (5.3)
10	My opinions about gay men and lesbians mainly are based on my moral beliefs about now things should be.	23 (40.4)	19 (33.3)	15 (26.3)

personal experiences with specific gay persons (56%), not at all have opinions based on their own judgment of how likely it is that they will interact with gay people in any significant way (47%), not at all have opinions based on their personal experiences with people who family members or friends are gay (64%), not at all have opinions based on their perceptions of how the people they care about have responded to gay people as a group (49%), not at all have opinions based on learning how gay people are viewed by the people whose opinions they most respect (47%), not at all have opinions based on the fact that they would rather not think about homosexuality or gay people (45%), not at all have opinions based on their personal feelings of discomfort or revulsion at homosexuality (40%).

Majority of the respondents have an opinions about gay men and lesbians are mainly based on their concern that they safeguard the civil liberties of all people in our society (63%) and are based on their moral beliefs about how things should be (40%) (Table 4).

In the present study majority (61%) of the respondents disagree that lesbians just can't fit into our society. Majority of the respondents (59%) agree that a women's homosexuality should not be a cause for discrimination in any situation and only 22% of the respondents agree that female homosexuality is detrimental to society because it breaks down the natural divisions between the sexes .Majority of the respondents (50.9%) were unsure whether state laws regulating private, consenting lesbian behavior should be loosened. Majority of the respondents (54.4%) disagree that female homosexuality is a sin and 52% disagree that the growing number of lesbians indicates a decline in Indian morals, disagree that female homosexuality is a threat to many of

our basic social institutions (56%), disagree that female homosexuality is an inferior form of sexuality (63%) and disagree that Lesbian are sick (57%).

Majority of the respondents (40%) disagree that Male homosexual couples should be allowed to adopt children the same hetero sexual couples, disagree that male homosexuals are disgusting (57%), disagree that male homosexuals should not be allowed to teach school (64%) and 52% of the respondents disagree that male homosexuality is a perversion.

In the present research 35% of the respondents agree that just as in other species; male homosexuality is a natural expression of sexuality in human men. Majority of the respondents' (59%) disagree that if a man has homosexual feelings, he should do everything he can to overcome them, disagree that they would not be upset if they learned that their son was a homosexual (42%), disagree that homosexual behavior between two men is just plain wrong (56%). In the present study 38% of the respondents were unsure and 35% disagree that the idea of male homosexual marriages seems ridiculous to them. Majority of the respondents' (52%) agree that male homosexuality is merely a different kind of lifestyle that should not be condemned (table).[5]

Table-5. Attitudes towards Lesbian/Gay Scale

Sl. No.		N = 57		
		Agree/strongly agree N (%)	**Unsure/ neutral N (%)**	**Disagree/ strongly Disagree N (%)**
1.	Lesbians just can't fit into our society.	8 (14.0)	14 (24.6)	35 (61.4)
2.	A women's homosexuality should not be a cause for discrimination in any situation.	34 (59.6)	9 (15.8)	14 (24.6)
3.	Female homosexuality is detrimental to society because it breaks down the natural divisions between the sexes.	13 (22.8)	22 (38.6)	22 (38.6)
4.	State laws regulating private, consenting lesbian behavior should be loosened.	16 (28.1)	29 (50.9)	12 (21.1)
5.	Female homosexuality is a sin.	14 (24.6)	12 (21.1)	31 (54.4)
6.	The growing number of lesbians indicates a decline in Indian morals.	13 (22.8)	14 (24.6)	30 (52.6)
7.	Female homosexuality in itself is no problem, but what society makes of it can be a problem.	27 (47.4)	15 (26.3)	15 (26.3)
8.	Female homosexuality is a threat to many of our basic social institutions.	10 (17.5)	15 (26.3)	32 (56.1)
9.	Female homosexuality is an inferior form of sexuality.	11 (19.3)	10 (17.5)	36 (63.2)
10.	Lesbian are sick.	11 (19.3)	13 (22.8)	33 (57.9)
11.	Male homosexual couples should be allowed to adopt children the same hetero sexual couples.	17 (29.8)	17 (29.8)	23 (40.4)
12.	I think male homosexuals are disgusting.	8 (14.0)	16 (28.1)	33 (57.9)
13.	Male homosexuals should not be allowed to teach school	7 (12.3)	13 (22.8)	37 (64.9)
14.	Male homosexuality is a perversion.	10 (17.5)	17 (29.8)	30 (52.6)
15.	Just as in other species, male homosexuality is a natural expression of sexuality in human men.	20 (35.1)	16 (28.1)	21 (36.8)
16.	If a man has homosexual feelings, he should do everything he can to overcome them.	10 (17.5)	13 (22.8)	34 (59.6)
17.	I would not be upset if I learned that my son was a homosexual.	8 (14.0)	25 (43.9)	24 (42.1)
18.	Homosexual behavior between two men is just plain wrong.	9 (15.8)	16 (28.1)	32 (56.1)
19.	The idea of male homosexual marriages seems ridiculous to me.	15 (26.3)	22 (38.6)	20 (35.1)
20.	Male homosexuality is merely a different kind of lifestyle that should not be condemned.	30 (52.6)	18 (31.6)	9 (15.8)

Table-6. Correlation between Attitude towards Lesbian/Gay Scale, age, mental health experience and Attitude function inventory for attitude towards Lesbian/Gay Target

	Age	Mental health experience	Attitude function inventory for attitude towards Lesbian/Gay Target
Attitude towards Lesbian/Gay Scale	.008	.052	.336*

The above table shows that attitude towards lesbian/gay scale has a positive correlation with age (r = .008), mental health experience (r = .052) and significant positive correlation was found with attitude function inventory for attitude towards lesbian/gay target (r = .336, p < 0.05) (table 6).

Table-7. Correlation between Attitude function inventories for attitude towards Lesbian/Gay Target, age and mental health experiences

	Age	Mental health experiences
Attitude function inventory for attitude towards Lesbian/ Gay Target	.218	.270*

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

The above table shows attitude function inventory for attitude towards lesbian/gay target has a positive correlation with age (r = .218) and a significant positive correlation with mental health experience (r =.270, p, < 0.05) (table 7).

Discussion

From the present study it can be said that majority of mental health professionals attitude towards homosexuality (lesbians/gay) are not based on that they care about is gay, not at all have opinions based on their personal experiences with specific gay persons, not at all have opinions based on their own judgment of how likely it is that they will interact with gay people in any significant way, not at all have opinions based on their personal experiences with people who family members or friends are gay, not at all have opinions based on their perceptions of how the people they care about have responded to gay people as a group, not at all have opinions based on learning how gay people are viewed by the people whose opinions they most respect, not at all have opinions based on the fact that they would rather not think about homosexuality or gay people, not at all have opinions based on their personal feelings of discomfort or revulsion at homosexuality. Majority of the mental health professionals have an opinions about gay men and lesbians are mainly based on their concern that they safeguard the civil liberties of all people in our society and are based on their moral beliefs about how things should be.

In the present study majority of the respondents disagree that lesbians just can't fit into our society. Moreover majority of the respondents agree that a women's homosexuality should not be a cause for discrimination in any situation and only. Majority of them were unsure whether state laws regulating private, consenting lesbian behavior should be loosened. Majority of the respondents disagree that female homosexuality is a sin and disagree that the growing number of lesbians indicates a decline in Indian morals, disagree that female homosexuality is a threat to many of our basic social institutions, disagree that female homosexuality is an inferior form of sexuality and disagree that lesbian are sick. While majority of the respondents disagree that male homosexual couples should be allowed to adopt children the same hetero sexual couples, disagree that male homosexuals are disgusting, disagree that male homosexuals should not be allowed to teach school and disagree that male homosexuality is a perversion. Majority of the respondents' disagree that if a man has homosexual feelings, he should do everything he can to overcome them, disagree that they would not be upset if they learned that their son was a homosexual, disagree that homosexual behavior between two men is just plain wrong and agree that male homosexuality is merely a different kind of lifestyle that should not be condemned.

From the present study it can be said that mental health professional are having positive attitude towards gays and lesbian which is similar with other studies conducted on health professional.[5,9,10-18] The result findings of the positive attitudes of mental health professionals towards

homosexuality may be masked by the ethical guidelines of the mental health professionals in promoting mental health by removing the stigma of mental illness that has long been associated with the homosexual orientation.

This paper points to the influence in attitudes of mental health professionals after homosexuality ceased to be a diagnosis in the field of psychiatry and the conception of non-pathological understanding of homosexuality. As empirical evidence and professional norms do not support the idea that homosexuality is a form of mental illness or is inherently linked to psychopathology this may be indicative of the more positive attitude towards the sexual minority group of the mental health professionals.

Furthermore, mental health professional attitudes towards homosexuals and lesbians are of great importance as they can bring change and can promote anti-stigma programs towards these marginalized groups. Consequently, lesbian gay and transgender issues could more frequently be made an integral part of the course curriculum, through exposure to lesbian, gay and transgender perspectives in the clinical training period. Several limitations of the present study deserve mention, this study utilized a cross-sectional design, purposive sampling technique and sample size was small.

Conclusion

Attitudes toward gays and lesbians are an important topic for mental health professional, Thus from the result we can conclude that majority of mental health professional have positive attitude towards gay/lesbian population. Attitudes of health professionals can influence the willingness to provide help to homosexual patients and consequently the quality of health care and treatment. This paper conclude by calling for practitioners and researchers to conduct more research in understanding the attitude of mental health professionals in context to the prevailing cultural norms and social attitude of the society. In future research it will be important to compare the attitudes of mental health professionals with other subgroups or particular subculture in the general population.

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Original Article

A descriptive study to assess the knowledge, attitude and practices regarding prevention of relapse among substance dependent patients and their caregiver in DDTC, PGIMER, Chandigarh in 2014-15

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ABSTRACT

Background: *Substance abuse is a common mental health problem in a community. To control a relapse is a big challenge in the management of a person with substance dependence.* ***Aim:*** *A descriptive study to assess the knowledge, attitude and practices regarding prevention of relapse among substance dependant patients and their caregivers was conducted in OPD and ward of Drug De –addiction and Treatment Centre in Post Graduate Institute of Medical Education and Research in 2015.* ***Material and Methods:*** *The research approach adopted was quantitative, non experimental, descriptive survey. Purposive sampling technique was found to be appropriate for this study. Total 50 patients and their caregivers were selected who were registered in DDTC ward and OPD. The tool used for data collection was an interview schedule and it was conducted on patients and their caregivers who were willing to participate for the study. Data collected was analyzed by using descriptive statistics.* ***Results:*** *Out of 50 sample of male patients, 36% subjects were from age group of 21-40 yrs with mean ± SD = 2.78 ± 0.661. 13% of total sample was matric passed and 38% were married. 27% belonged to the group with per capita income < Rs 5000 with mean ± SD = 1.60 ± 0.857 and 33% sample belongs to urban area. Out of 50 samples of caregivers, 28% subjects were from age group 21-40 years with mean ± 2.38 ± 2.00 and 34% population were females. 17% was metric passed and 30% of the sample belonged to urban area. 18% of patients were accompanied by their parents. In present study, people had positive attitude and good knowledge regarding drug de- addiction treatment and 98% of them believed that regular treatment and counseling helped in prevention of relapse. The precipitating factors like low self-esteem (76%), stress in social life (84%), stress with spouse (70.6%), peer pressure (84.3%) and alike psychological determinants played major role in leading patients towards relapse.* ***Conclusion:*** *It is recommended that study can be conducted on large scale on substance dependant patients to know the condition of state and coping mechanism skills of substance dependant patients. It is also recommended that nurses should inculcate behavioural change communication among substance dependant patients.*

Keywords: *Substance dependence, Relapse, Knowledge, Attitude, Practices.*

Introduction

A psychoactive drug, psycho pharmaceutical, or psychotropic is a chemical substance that crosses the blood–brain barrier and acts primarily upon the central nervous system where it affects brain function, resulting in alterations in perception, mood, consciousness, cognition, and behavior.[1] These are alcohol, substituted amphetamines, barbiturates,

cocaine, methaqualone, and opioids[2] Substance abuse refers to the harmful or hazardous use of psychoactive substances, including alcohol and illicit drugs.[3] Psychoactive substance use can lead to dependence syndrome – a cluster of behavioral, cognitive, and physiological phenomena that develop after repeated substance use and that typically include a strong desire to take the drug, difficulties in controlling its use, persisting in its use despite harmful consequences, a higher priority given to drug use than to other activities and obligations, increased tolerance, and sometimes a physical withdrawal state.[1] Substance abusers are the one who consume the substance in any form.

According to the source updated in 2014, 80%of patients with alcohol addictions relapse within 1st year. After 2 years, however this relapse rate falls to 40%.The rate drops even further after 5 years, though data is not available.[4]

Relapse is resumption of drug use after a period of abstinence[5] or an unfolding process in which resumption of substance use is the last even in a long sequence of maladaptive responses to internal and external stressors.[6] Or Return to previous levels of use.[7] Lapse is a single incidence of substance use. Lapse may end quickly or lead to a relapse of varying proportions. Relapse should be considered as a continuum with the extent of the renewed substance use defining the degree of relapse. There are various causes of relapse; Intrapersonal causes such as negative emotional states, like anger, anxiety, depression, frustration, and boredom and positive emotional states; Interpersonal such as interpersonal conflict; Social pressure such as direct verbal or nonverbal persuasion, indirect pressure (company of users).[8-12] The risk factors dishonesty, expectations that are too high lack of patience, feelings of self-pity, over confidence, abusing other substances, complacency in recovery, depression and frustration.

Relapse prevention is medical intervention designed for educating cognitive and behavioral skills to avoid continued drug abuse and relapse. There are general relapse prevention approaches.

i. stabilization, in early abstinence general dictum is "Go slow and focus on basics"
ii. assessment, this process is designed to identify the recurrent pattern of problems that caused past relapses,
iii. relapse education, in which family involved and reinforce four major messages-relapse is normal and natural part of recovery,
iv. warning sign identification, identify irrational thoughts, unmanageable feeling and self defeating behavior that accompanied each
v. warning sign management, take each relapse warning sign and develop a general coping strategy
vi. recovery planning, schedule activities that put patient into regular contact with people who would help him avoid alcohol
vii. inventory training, morning inventory is to prepare to recognize and manage warning sign; evening inventory is to analyze problem and monitor relapse warning signs
viii. family involvement, focus on the need for emotional support from families and friends; encourage family to join AA, NA; work together to avoid future relapses;
ix. follow-up, warning signs change during progress of recovery and each stage of recovery has unique warning signs and plan needs to be updated at regular intervals.

Methodology

The study population included all subjects admitted in Drug Deaddiction and Treatment Centre during the selected time period who were falling in age range of 16-60 years. Sample size was 50 patients and 50 caregivers via purposive sampling. An inclusive sampling criterion of the study was patients and their attendants physically present at drug de addiction and treatment centre, PGIMER. Subjects who refused to participate in the study were under exclusive sampling criteria. Tools used for study was prepared after extensive literature review and experts validation. These tools were used for data collection as (i) subjects socio-demographic profile, variables related to disease condition, relapse prevention knowledge tool, relapse prevention attitude tool, relapse prevention practice tool, (ii) care-givers socio-demographic profile, variables related to disease condition in view of care-givers, tool for responses of care-givers related to relapse. Interview schedule was used as method of data collection. All subjects in the study were informed about their participation in research. Written informed consent was taken from each subject. Confidentiality and privacy of each subject was maintained.

Full autonomy was given to all subjects to withdraw from the study at any time. Interview has taken 25-30 minutes on each subject and scoring was done according to selected criteria. The analysis of data was done using the SPSS system.

Results

Table 1 depicts findings as follows: Findings of distribution of patients - Majority of the sample population fell in 21- 40 years age group (72%). Total population was male. Regarding educational

Table-1. Socio-demographic variables of patients and care-givers

Sr. No.	Variables	Frequency (n=50) (%) Subjects	Frequency (n=50) (%) Care-givers
1.	Age		
	• 0-20 years	4 (8)	3 (6)
	• 21-40 years	36 (72)	28 (56)
	• 41-60 years	7 (14)	16 (32)
	• Above 60 years	3 (6)	3 (6)
2.	Gender		
	• Male	50 (100)	16 (32)
	• Female	0	34 (68)
3.	Educational status		
	• Illiterate	2 (4)	2 (4)
	• No formal education	5 (10)	1 (2)
	• Primary	8 (16)	9 (18)
	• Middle	10 (20)	2 (4)
	• 10^{th} passed	13 (26)	17 (34)
	• Graduate	4 (8)	16 (32)
	• Post graduate	8 (16)	3 (6)
	• Others	0	0
4.	Occupational status		
	• Unemployed	8 (16)	20 (40)
	• Unskilled worker	2 (4)	3 (6)
	• Semi skilled	7 (14)	11 (22)
	• Skilled worker	13 (26)	10 (20)
	• Farmer/Self employed	12 (24)	2 (4)
	• Semi professional	1 (2)	1 (2)
	• Professional	7 (14)	3 (6)
5.	Marital status		
	• Unmarried	12 (24)	5 (10)
	• Married	38 (76)	43 (86)
	• Widowed	0	2 (4)
6.	Type of family		
	• Nuclear	16 (32)	29 (58)
	• Joint	32 (64)	21 (42)
	• Extended	2 (4)	0
7.	Monthly income		
	• < Rs 5,000	1 (2)	5 (10)
	• Rs 5,000 - Rs 10,000	5 (10)	6 (12)
	• Rs 10,000 - 15,000	17 (34)	13 (26)
	• Rs 15,000 - 20,000	12 (24)	3 (6)
	• > Rs 20,000	15 (30)	23 (46)
8.	Residence		
	• Rural	17 (34)	20 (40)
	• Urban	33 (66)	30 (60)
9.	Relationship with patient		
	• Parents	—	18 (36)
	• Spouse	—	17 (34)
	• Sibling	—	8 (16)
	• Friend	—	0 (0)
	• Son	—	3 (6)
	• Other	—	4 (8)

status 26% was matric passed. Regarding occupational status - 16% were unemployed while 26% were skilled workers. 76% were married and for type of family - 76% belonged to joint family .54% of total sample belonged to the group with per capita income < Rs 5,000. 66 % of the sample belonged to urban area. 48% of the patients were Sikh.

Findings of distribution of caregivers - Majority of the sample population fell in 21- 40 years age group (56%). Out of total population, 68% were female. Regarding educational status 34% was Metric. 40% were unemployed. Regarding marital status 86% were married. 56% belonged to nuclear family. Maximum monthly family income was more than Rs 20,000/- (46%). Majority of the sample belonged to urban area (60%). Half of the population belonged to Sikhism. 36% of total population of patients was accompanied by their parents.

Table 2(i) depicts 80% of patients were multi drug dependent. Majority of them were using the drugs from 1-10 years i.e. 64%. 40% of the patients had taken their drug one week ago. 42% of the patients had relapsed for one time only. Majority of the patients (52%) took treatment. 8% of patients experienced physical weakness as high risk situation.

Table-2 (ii) According to caregivers response, 86% of patients was having history of relapse. 1/4th of patients experienced relapse two times, 60% of the patients took treatment for the time period less than 6 months (56%), in 34% patients, treatment taken was effective.

Table-3. Response of patients regarding relapse prevention (Knowledge, attitude and practices)

Table 3.1 shows that 94% of total sample (N = 50) of patients was aware of term relapse and 46% of total patients think that relapse is a normal. According to majority (94%) of patients, craving was "Irresistible desire to take the drug". According to 68% of patients craving was normal. Nearly 70% of patients believed that relapse was a sign of emotional weakness, physical weakness, mental illness and social stigma and 24% of patients believed it as a sign of cultural belief. Out of total sample 80% of patients thought that physical weakness after discontinuing the drug contribute to relapse.

Table 3.2 shows attitude of patients regarding relapse prevention that 3/4th of patients have discussed about relapse with family member or psychiatrist and 98% of patients felt that regular follow up was important for treatment and regular treatment was helpful in prevention of relapse and 94% thought that counseling and 82% thought yoga was helpful in relapse prevention. Substance abuse affected the physical health. Factor like avoiding high risk situations, feeling of sobriety, fear of child's future and image in society helped them to avoid relapse.

Table 3.3 shows that practices related to relapse/relapse prevention i.e. 58% of patients took drug in isolation and 36% of patients took drug in

Table-2(i) : Variables related to disease condition in view of patients

S. No.	Variables	Frequency (%) (N = 50)
1.	Diagnosis	
	• Alcoholic	10 (20)
	• Multi drug dependence	40 (80)
2.	Duration of use	
	• < 1 year	2 (4)
	• 1 year - 10 year	32 (64)
	• > 10 year	16 (32)
3.	Last intake of the substance	
	• Today	6 (12)
	• One day before	0 (20)
	• One week ago	120 (40)
	• One month ago	5 (10)
	• Six month ago	2 (4)
	• One year ago	7 (14)
4.	Number of relapse	
	• 0	6 (12)
	• 1	21 (42)
	• 2	6 (12)
	• 3	8 (16)
	• 4	1 (2)
	• 5	4 (8)
	• 6	2 (4)
	• 7	1 (2)
	• 8	1 (2)
5.	History of treatment	
	• Yes	26 (52)
	• No	24 (48)
6.	If yes, for treatment	
	• Not applicable	22 (44)
	• Admitted	10 (20)
	• Not admitted	18 (36)
7.	High risk situations	
	• Nothing	16 (32)
	• Peer pressure	11 (22)
	• Mood swings	11 (22)
	• Family problems	8 (16)
	• Physical weakness	4 (8)

Table-2 (ii): Variables related to disease condition in view of care-givers

S. No.	Variable	Frequency (%) (N=50)
1.	Previous history of relapse in your patient?	
	• Yes	43 (86)
	• No	6 (12)
	• Not applicable	1 (2)
2.	Number of relapses	
	• 0	5 (9.8)
	• 1	12 (23.5)
	• 2	13 (25.5)
	• 3	9 (17.6)
	• 4	4 (7.8)
	• 5	1 (2)
	• 6	3 (5.9)
	• 7	2 (3.9)
	• 8	1 (2)
3.	Was treatment taken by your patient?	
	• Yes	30 (60)
	• No	20 (40)
4.	Duration of treatment	
	• < 6 months	28 (56)
	• 6mnth-1year	2 (4)
	• > 1year	1 (2)
	• Not applicable	19 (38)
5.	Was it effective?	
	• Yes	17 (34)
	• No	14 (28)
	• Not applicable	19 (38)

Table-3.1: Knowledge of relapse/ relapse prevention among patients

S.No.	Relapse prevention items related to knowledge	f (%)
1.	Is relapse "taking the drug again after a period of abstinence?"	47 (94)
2.	Do you think relapse is normal?	23 (46)
3.	Is craving "irresistible desire to take the drug"?	47 (94)
4.	Is craving "normal"?	34 (68)
5.	Do you see relapse as a sign of Emotional weakness?	38 (76)
6.	Do you see relapse as a sign of social stigma?	36 (72)
7.	Do you see relapse as a sign of mental illness?	33 (66)
8.	Do you think relapse is related physical weakness?	34 (68)
9.	Do you see relapse as sign of cultural belief/religious belief?	12 (24)
10.	Do you think physical weakness after leaving drug contributes to relapse phase?	40 (80)

Table-3.2: Attitude towards relapse/ relapse prevention among patients

S.No.	Relapse prevention items related to attitude	f (%)
1.	Have you ever discussed about your relapse with family member or psychiatrist?	36 (72)
2.	Do you feel that regular follow up is important for the treatment?	49 (98)
3	Do you feel "Yoga" is good for substance dependant patient?	41 (82)
4	Do you feel that regular treatment is helpful in prevention of relapse?	49(98)
5	Do you think counseling helps in prevention of relapse?	47(94)
6	Has substance use affected your Mental Health?	29 (58)
7	Has substance use affected your physical Health?	46 (92)
8	What kind of situation/ self /person/ things help you to avoid relapse?	
	• side effect of drugs (health related)	34 (68)
	• lack of finances	29 (58)
	• image in society	38 (76)
	• fear of child's future	40 (80)
	• feeling of sobriety	39 (78)
	• avoiding high risk situations	40 (80)
	• sexual activites	25 (50)
	• Any other	0 (0)

peer group and 6% prefer both. 66% of patients took drug after waking up and 54% of took drugs frequently in a day and 58% during social gathering. Out of total sample 76% of patients left the situation, 66% showed assertiveness, 62% of patients spent time with family and do time management and 54% of patients went for relaxation therapy to avoid relapse.

Table 4 shows that 94% of caregivers were aware that prevention of relapse was possible and 88% of caregivers agreed that craving was responsible for relapse. Half of the total sample said that repeated relapse was an indicator of treatment failure whereas 84% of them said that craving could be controlled bythe patienthimself and 56.9% said that patient was only responsible for relapse. 46% of caregivers thought that drug addicts are bad people and 84% of them also thought that patients who couldn't quit for the first time, could never quit usage of drugs. 92% of caregivers responded that patient found the drugs are relaxing-

Table-3.3: Practices related to relapse/ relapse prevention among patients

S. No.	Relapse prevention items related to practices	f (%)
1.	Have you prefer to take drug in isolation	29 (58)
2.	Have you prefer to take the drug in peer group?	18 (36)
3.	What was your pattern of use?	
	• after waking up	33 (66)
	• whole day continuously	22 (44)
	• occasionally	18 (36)
	• frequently in a day	27 (54)
	• social gathering	29 (58)
	• once in a day in large amount	22 (44)
	• any other	3 (6)
4.	What do you do to avoid relapse?	
	• Leaving situation	38 (76)
	• Assertiveness	33 (66)
	• Anger management	26 (52)
	• Meditation	18 (36)
	• Spending time with family	31 (62)
	• Outing with friends	16 (32)
	• Time management	31 (62)
	• Relaxation therapy	27 (54)
	• Joining AA/NA groups	12 (24)
	• Religious practices	24 (48)
	• Any other	3 (6)

agents and 84% of them also thought that craving could be controlled by patient himself. 44% thought that symptoms shown by patient after living drugs were just a way of escaping from work. The findings also showed that 84.3% patients have relapse due to peer pressure and 84.3% responded that stress in social life is also a factor. 94% of caregivers believed that family played a major role in prevention of relapse.

Table 5 shows that 100% of the caregivers and 94% of the patients were aware about the term "relapse". Nearly 75% of both the sample said that relapse is a sign of emotional weakness. 76% of the caregivers and 68% of the patients believed that "relapse" is a sign of physical weakness. According to 76% of caregivers and 66% of the patients "relapse" was a sign of mental illness. 38% of caregivers and 24% of the patients believed that "relapse" was a sign of religious and cultural belief. 92% of the caregivers and 98% of the patients believed that taking regular medicines help to prevent the relapse. According to 94% of patients and 94% of care-givers responded that counseling helps in prevention of relapse. According to patients 80%

Table-4: Response of care-givers related to relapse/ relapse prevention

S. No.	Response of subjects according to Relapse Prevention tool	f (%)
1.	Do you think drug addicts are bad people?	23 (46)
2.	Do you think prevention of relapse is possible?	47 (94)
3	Do you think family plays an important role in prevention of relapse?	47 (94)
4	Do you think repeated relapse is an indicator of treatment failure?	25 (50)
5	Do you think if a person can't quit for the first time, he can never quit usage of the drug ever?	31 (62)
6	Is relapse according to you sign of interpersonal problems?	42 (84)
7	Does the patient find that drugs are relaxing-agents?	46 (92)
8	Do you think the symptoms shown by patient after leaving the drug are just a way of escape from work?	22 (44)
9	Do you think craving is responsible for relapse?	44 (88)
10	Do you think craving can be controlled by patient himself?	42 (84)
11	Is patient only responsible for relapse?	29 (56.9)
12	Do you think patient's treatment failure is completely because of his mental illness?	
13	What are the factors, according to you, lead him towards relapse?	
	• Disputes in family	41 (8)
	• Stress in social life	43 (84.3)
	• Low self esteem	39 (76.5)
	• Differences with colleagues	22 (43.1)
	• Stress at work	35 (68.6)
	• Stress with spouse	36 (70.6)
	• Peer pressure	43 (84.3)
	• Any other	0 (0)

of the factors that prevented the patient from relapse were – avoiding the aggravating situations, family support, feeling of sobriety, willpower and motivation whereas according to caregivers all the above listed factors contributes to "prevention of relapse".

Discussion

This study describes the knowledge, attitude and practices regarding prevention of relapse among substance dependant patients and their caregivers in DDTC, PGIMER, Chandigarh in year 2014-15.

The present study undertaken shows that unpleasant emotions (mood swings) and physical discomfort contribute 22% and 92% respectively

Table-5. Comparison between response of patients and their caregivers for the Relapse Prevention Tool

S. No.	Relapse Prevention Tool Items	f (%), n = 50 Patients	f (%), n = 50 Caregivers
1	Do you think "Relapse" means to take the drug again after a period of abstinence?	47 (94)	50 (100)
2	Is Relapse according to you sign of emotional weakness ?	38 (76)	37 (74)
3	Is relapse according to you sign of physical weakness?	34 (68)	38 (76)
4	Is relapse according to you sign of mental illness?	33 (66)	38 (76)
5	Is relapse according to you sign of religious or cultural belief?	12 (24)	19 (38)
6	Do you think taking regular medicines helps to prevent relapse?	49 (98)	46 (92)
7	Do you think counseling helps in prevention of relapse?	47 (94)	47 (94)
8	What are the factors that prevent him from relapse?		
	• Family support	39 (78)	48 (94)
	• Self control	49 (98)	48 (94)
	• Avoiding the aggravating situations	40 (80)	47 (92)
	• Doing religious ceremonies	32 (64)	44 (86)
	• Attending religious ceremonies	32 (64)	45 (88)
	• Will power	47 (94)	47 (92)
	• Feeling of sobriety	39 (78)	48 (94)
	• Motivation	48 (96)	47 (92)
	• Side effects of drugs	34 (68)	35 (68)
	• Support from friends	27 (54)	39 (76)

and leads to relapse in substance dependant patients and same study was conducted in Bushehr, to examine high risk situations for relapse. It shows us that unpleasant emotions and physical discomfort contributes 72% towards relapse in such patients.

The present study shows that in 22% sample (patients) peer pressure influences them for taking the substances and a study was conducted by Brown et al focused on the characteristics of adults who relapsed following treatment for alcohol and drug dependence in U.S.A.[13] This study supports our study in respect to influence of peer group in relapse.The present study undertaken shows that 98% of patients thinks that regular treatment helps in prevention of relapse and a similar study was conducted by R.H. Moos and B.S. Moos to examine the rates and predictors of 3 year remission and subsequent 16 year relapse (N=461) showed a comparison between the individuals who obtained help, those who did not were less likely to achieve 3 years remission and more likely to relapse. Hence it supports our study.[14]

The present study shows that will power in 94% of cases helps the patient in recovery and a study was conducted by R. Gonzales to explore perceptions about recovery, needs and drug-avoidance, recovery behavior among youth in substance abuse treatment centre, Los Angeles concluded that changing personal behavior facilitates in 89.6% of cases for recovery.[15]

Our study shows psychological and environmental determinants such as stress in social life, at work and with spouse contributed to relapse by 84.3%, 68.6% and 84.3% respectively and a similar findings were seen in a study to review psychological and environmental determinants of relapse for crack cocaine smokers (N=35) after hospital detoxification and this study illustrates the role of multi determinants in relapse.[16]

The present study to assess the knowledge, attitude and practices regarding prevention of relapse among patients and their caregivers shows that 98% of total sample (N=50) believe in regular treatment as an effective measure for relapse prevention in alcohol and multidrug dependent patients. It is supported by similar study – a meta-analytical study, was conducted on sample of 9504 participants, to evaluate the overall effectiveness of relapse prevention and extent to which certain variables may relate to treatment outcome which concluded that relapse prevention was most effective, when combined with the adjunctive use of medications.[17]

The present study to assess the knowledge, attitude and practices regarding prevention of relapse among patients and their caregivers

illustrates that according to 82% of total sample (N-50), therapies like yoga, meditation are helpful in prevention of relapse among substance dependant patients. These findings are supported by similar study – mindfulness based relapse prevention for substance use disorders, concluded that mindfulness meditation therapies can be used to alleviate distress and foster fundamental changes in maladaptive pattern of behavior.[18]

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Original Article

ECT Use in Pregnancy – A Retrospective Review of cases from a Tertiary Centre

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ABSTRACT

Background: *ECT is a commonly used treatment modality in the management of psychiatric disorders. The aim of the current study was to document the pattern of use of electro-convulsive therapy in pregnant females suffering from psychiatric illnesses at a tertiary care hospital.* ***Methods:*** *The data was collected retrospectively from ECT records of pregnant patients who received ECT at a tertiary care hospital of Indian metro city during the years 2010-2015. The data was collected in a case record form where various demographic and clinical parameters were noted. The data was thenanalysed using descriptive statistics.* ***Results:*** *7 psychiatric patients during pregnancy received 83 ECT sessions for bothpsychotic disorders and affective disorders. 2 patients were in the 1st trimester and 5were in the 2nd trimester. No complications (major or minor) were observed in any of the cases and all had babies that were born through either normal delivery or caesarean section without any complications after birth.* ***Conclusions:*** *Although ECT is an effective and safe treatment for psychiatric disorders inpregnancy, it is seldom used due to lack of experience. The cases documented here serve as evidence for the safety and efficacy of ECT use in pregnancy when patients may have psychiatric problems.*

Keywords: *ECT, Pregnancy, Safety, Effectiveness*

Introduction

The treatment of psychiatric illnesses during pregnancy warrants the considerationof safety for both mother as well as child. Psychotropic medications carry the risk ofteratogenicity to the developing fetus especially in first trimester.[1] Some of the alternativenon pharmacologic treatment approaches such as psychotherapy might be timeconsuming thereby keeping the patient without treatment for a long duration of time.[2] Electroconvulsive therapy (ECT) despite being proven to be safe and effectivestill remains a controversial treatment in psychiatric practice.[3] According to a study, withproper medical and anaesthetic care, use of ECT is safe in all trimesters of pregnancy.[4]

Major depressive disorder (MDD) is the most common psychiatric disorder affecting pregnant women.[5] If left untreated it might have adverse effect on the outcome of the pregnancy.[6] Whereas the use of antidepressants carry the risk of harming the fetus,[7] ECT has comparatively been proven to be equal or more effective in the treatment of depression.[8] According to a meta-analysis about 84% of the pregnant patients with MDD respond to the treatment with ECT atleast partially whereas among those withschizophrenia the number of responders is 61%.9 ECT has also been found to be effectivein treatment of Bipolar disorder, catatonia and neuroleptic malignant syndrome inpregnancy.10-12 Inspite of this data on safety and effectiveness ECT still remains anunderused treatment in the mental health disorders in

pregnancy.[13] There is a dearth of systematic prospective studies evaluating the benefits and drawbacks of its use in pregnancy.[9] There is no data on the use of ECT in pregnancy in the Indian population. The present study is a retrospective chart review of the use of ECT in pregnant females suffering from various psychiatric illnesses in a tertiary general hospital between the years 2010-2015. The review aims at adding information about safety and effectiveness of ECT in pregnant patients to the existing database of literature available.

Methodology

In our study, we collected the data of pregnant patients suffering from psychiatric illnesses who received ECT at a tertiary care centre and teaching hospital of an Indian metro city from 2010-2015. At the centre, where this study was done a standard-procedure is followed for administration of modified ECTs. ECTs are given in pregnant patients only after evaluation by a senior psychiatrist and after obtaining an informed consent. Before giving ECTs patient is thoroughly investigated. Patient is kept nil by mouth for at least 12 hours overnight. To prevent a sudden drop in placental perfusion ringer lactate or normal saline is infused prior to ECT. Propofol is used for anesthesia and succinylcholine is administered for peripheral muscle relaxation. After giving 100% oxygen ventilation in all the patients the ECT is administered using brief pulse ECT machine (Medicaid Systems, Chandigarh). All the patients are usually given bitemporal ECTs. Vital parameters of the patientare monitored throughout the procedure and the monitoring is continued for an hour. ECTs are given to in patients as well as to those on an outpatient basis. All the details about the procedure including demographic data, details of the illness, side effects or adverse outcomes if any are recorded on a ECT record card. The information for present study was extracted from these records. During this study, no patients were interviewed and no interventions were made intreatment by investigators. Data was collected retrospectively from ECT records of patients and filled into case record form. Demographic parameters collected were age, sex, religion, education and clinical parameters collected were diagnosis, anaesthetic agents used, number of ECT's given, complications during procedures, medical comorbidities and psychotropic medications prescribed and substance use. Data was entered into tabulated excel sheet and then it was analyzed using descriptive statistics.

Results

During this study, it was observed that total 7 pregnant females suffering from psychiatric illnesses received around 83 ECT sessions.[3] patient received less than 8 ECTs, 3 patients received 8-20 ECTs and 1 patient received 25 ECTs in last 5 years. The median for these values was.[12]

Age of patients receiving ECT ranged from 22 to 36 years of age and the mean age was 26.9 years. 2 of these women were in first trimester and 5 were in second trimester of pregnancy at the time of starting ECT treatment. Majority of the patients were suffering from schizophrenia (n = 6) and 1 patient was suffering from affective disorder. No major-complications like miscarriage or death were found in these records and on follow up all the patients were documented to have a normal delivery or caesarean section with no complications to the baby as per the records.

Discussion

It is well known from the literature that affective disorders are the most common indications for ECT in pregnancy. However in the present study majority of the patients had the diagnosis of schizophrenia (n = 6). This might indicate the variation in the preference pattern of the patients or the treatment chosen by the psychiatrists in the urban hospital. Bipolar mood disorder, catatonia and neuroleptic malignant syndrome areamong some other indications of ECT in pregnancy.[9,11,18] Patients receiving ECTs were receiving concomitant psychotropic medications during the treatment. It is well known fact that drugs like valproate, lithium, benzodiazepines, barbiturates can be harmful to the developing fetus.[13-14] ECT appears to be a safe modality of treatment during pregnancy which allows minimisation of the dosage of psychotropic medication and early stabilisation as was found in the present study. A most important concern while giving ECT in pregnant females is safe use of anaesthetic agents, maintenance of vital parameters and the prevention of complications such as aspiration. For these reasons ECT during pregnancy

should always be monitored like an obstetric emergency.[15] If this is achieved ECT is a safe treatment in all the trimesters of pregnancy.[2] In the present study it was found that atropine was used as a pre-anaesthetic-medication for preventing excessive secretions. As per literature atropine has been found to be safe for use in the pregnant patients.[16] Propofol was used for induction and succinylcholine was used for muscle relaxation. Both these drugs have been found to be safe for use in pregnant patients as per the previous studies.[17-19] During the ECT procedure care should be taken to prevent aspiration by reducing the gastric acidity with antacids, or at times by using Sellick's manoever.[19] A sudden drop in placental perfusion can be prevented by infusing intravenous fluids prior to the procedure as were the findings of present study. Irrespective of all the precautions the use of ECT during pregnancy has at timesled to complications such as deceleration of heart rate and induction of premature labor.[20-21] There is a case report which discusses successful use of to colytics to prevent the premature labor related to the use of ECT.[22] A case of intrahemispheric infarcts in the new born which were temporally related to the use of ECT in mother has also been reported.[23] However such case reports are very rare as compared to a large number of pregnancies which remained unaffected inspite of the use of ECT. Nevertheless they point towards the importance of monitoring of every pregnant patient for possible obstetric complications so that safety of these patients as well as their offspring can been sured. Although an effective treatment ECT faces the bane of being misperceived by people as a result of erroneous media portrayl.[24] A wide variation in the opinion is observed in the psychiatric community over the preference of ECT as a treatment.[25] However since the existing data points towards the safety and effectiveness of the procedure more research should be conducted in the area so that the prospective patients continue to get the benefit of this treatment.

From the present study, authors wish to advocate the safety and effectiveness of this procedure although further research with a larger sample size is desirable.

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Original Article

Job Satisfaction and Burnout among Professionals: An Indian Perspective

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ABSTRACT

Background*: Job satisfaction and burnout has become a permanent and pervading feature of various corporate sectors. In present scenario, workers are found to be burnt-out and exhausted very soon and the reason for being exhausted is that they are over burdened and highly competitive. Job satisfaction has been defined as a pleasurable emotional state resulting from the appraisal of one's job, an affective reaction to one's job and an attitude towards one's job. Burnout refers to a state of physical, emotional and mental exhaustion resulting from involvement with people in emotionally demanding situation. Burnout is associated with decreased job performance and low career satisfaction.* ***Aim****: Present study aims to assess and compare the level of job satisfaction and burnout among professionals of various sectors.* ***Method****: 120 samples were included from various sectors who were qualified the inclusion and exclusion criteria based on Purposive Sampling technique. They were evaluated on General Health Questionnaire 12, Job Satisfaction Index and Copenhagen Burnout Inventory.* ***Results****: No significant difference was found in the level of job satisfaction and in the degree of burnout. But trend (.081) was found in some area of Burnout such as (Work Burnout) by the multiple comparison of all groups with post hoc test by Bonferroni Method.* ***Conclusion:*** *The findings of the present study suggest that the level of job satisfaction and the degree of burnout were almost similar in all groups. But by the multiple comparisons of all groups a trends was found in the area of work burnout. It suggests that work burnout was higher in private sector professionals in comparison to the government sector Professionals.*

Keywords: *Job Satisfaction, Burnout, Professionals.*

Introduction

Job life is an important part of our daily lives which cause a great deal of stress and anxiety. Due to the competitive and promotive nature of the job environment most of the people in the world are spending their time for work purposes, as a result they ignore the stresses that are affect their work and personal life. Usually people are so worried about the outcome and results of their work that it even affects the way they treat other people and how they communicate with their peers, colleagues and customers. People with a higher percentage of occupational stress are not be satisfied with their job and as a result they do not feel good working in the organization. This may have a negative effects on the organization itself. Therefore, it is very crucial for employer and employees to realize the stress, burden and the stressor that cause all the negative outcomes.

Job satisfaction and burnout has become a permanent and pervading feature of various sectors. In the present time, workers are found to be easily

burnt-out and exhausted very soon and the reason for being exhausted is that they are over-burdened. Burnout has been most prevalent among workers in the helping and client based professions. Brookins[1] and Cooper and Marshall[2] found that some administrators experience more stress and less job satisfaction and "70% of their whole life stress resulted from their work conditions". Studies have shown that these individuals feel high stress[3-7] and low work satisfaction.[7-10]

Job Satisfaction

Work has a specific role in people's life. It occupies a lot of their time and efforts, it also provides the financial assistance of their lifestyles. Thus, the employees' job should be impressive, attractive which contribute to their satisfaction. It is shown that job satisfaction may influence many aspects of work such as efficiency, productivity, absenteeism, quality of life, intention to stop, and finally employees' well-being[11]. Job satisfaction is how people feel about their jobs and different aspects and areas of their jobs. It is the extent to which people like or dislike their jobs[12]. According to Lease job satisfaction is the degree or potential of a professional's affective involvement toward the job role occupied in the work setup[13].

Burnout

It is increasingly recognized as being a serious problem issues which is affecting many people lives, particularly those in the human service industry. Work burnout is a response to chronic social, emotional and inter-personal stressors and anxieties on the job.[14] According to Maslach, Jackson, and Leiter[15] burnout differs from occupational stress in that it is specific to work that requires intense involvement. It is a condition of physical, emotional fatigue, which caused by a long-term commitment to demanding conditions. It has been described as a sense of helplessness, worthlessness, hopelessness, low energy levels, tiredness, easy fatigues, and a feeling of being trapped. More specifically, it involves the chronic strain or pain that results from an incongruence between the worker and the job conditions. In the multidimensional model of the burnout phenomenon there are three special and triggering dimensions. These include exhaustion, detachment from the job and lack of accomplishment. Some negative feelings for self, work and social life.[16]

Material & Methods

Aims of the study:

- To assess and compare the level of Job satisfaction among the professionals of various sectors.
- To assess and compare the degree of Burnout (Personal, Work & Client) among the professionals of various sectors.

Sampling & Sample

For the present study a total of 120 professionals working in various corporate sectors (30 from Private Sectors, 30 from Public Sectors, 30 from Govt. Sectors and 30 from Non-Govt Organisations) were included and the sample was drawn using purposive sampling technique.

Design

The present study was a cross-sectional organizational based one.

Venue

The study was carried out on the population from various sectors located in Lucknow city.

Tools Used

- **General Health Questionnaire -12 (Goldberg and William)[17]:** Goldberg and William developed the General Health Questionnaire-12 in 1978. The 12 items questionnaire is used to see the general health as well as it is used to screen any psychiatric morbidity in healthy persons.
- **Job Satisfaction Index (Bayfield and. Rothe)[18]:** The Job Satisfaction Scale was designed and developed by Bayfield, A.H. and. Rothe in 1951. It has 18 items Job Satisfaction Index provides an overall index of job satisfaction rather than measuring specific aspects.
- **Copenhagen Burnout Inventory (Kristensen et al)[19]:** It is used to assess the degree of burnout. It consists of three sub scales: Personal burnout, which has 6 items, work related burnout, consists which

of 7 items and Client related burnout which consists of 6 items. Clients can be patients, students, children, inmates or the kind of recipients.

Analysis of data: The data obtained was analyzed using the Statistical Package for Social Sciences Version 20.0 (SPSS-20.0)

Discussion

The present study aims to assess and compare the level of Job satisfaction & degree of Burnout (Personal, Work & Client) among the professionals of various sectors. So far very few studies have tried to assess and finally compare the level of job satisfaction and degree of burnout among the

Results

Table-1: Socio Demographic characteristics of Professionals of various Sectors

Variables		Groups				x^2	p
		Private n (%)	Public Sector n (%)	Govt. n (%)	NGO's n (%)		
Age	20-30 Yrs	14 (46.7%)	22 (73.3%)	22 (73.3%)	15 (50.0%)		
	31-40 Yrs	15 (50%)	7 (23.3%)	7 (23.3%)	13 (43.3%)	8.567	.199
	41-50 Yrs	1 (3.3%)	1 (3.3%)	1 (3.3%)	2 (6.7%)		
Sex	Male	27 (90%)	26 (86.7%)	24 (80%)	26 (86.7%)	1.302	.729
	Female	3 (10%)	4 (13.3%)	6 (20%)	4 (13.3%)		
Marital Status	Single	10 (33.3%)	14 (46.7%)	13 (43.3%)	9 (30.0%)	2.397	.494
	Married	20 (66.7%)	16 (53.3%)	17 (56.7%)	21 (70.0%)		
Socio-Economic Status	High	10 (33.3%)	6 (20%)	3 (10%)	13 (43.3%)	12.185	.058 (Trend)
	Middle	20 (66.7%)	23 (76.7%)	25 (83.3%)	15 (50.0%)		
	Low	0 (0%)	1 (3.3%)	2 (6.7%)	2 (6.7%)		
Domicile	Rural	10 (33.3%)	4 (13.3%)	4 (13.3%)	9 (30.0%)	5.878	.118
	Urban	20 (66.7%)	26 (86.7%)	26 (86.7%)	21 (70.0%)		
Religion	Hindu	29 (96.7%)	29 (96.7%)	25 (83.3%)	25 (83.3%)	5.926	.115
	Muslim	1 (3.3%)	1 (3.3%)	5 (16.7%)	5 (16.7%)		
Education	Up to Class X	0 (0%)	0 (0%)	1 (3.3%)	1 (3.3%)	11.920	.064 (Trend)
	Class XI-Graduation	16 (53.3%)	9 (30%)	6 (20%)	6 (20%)		
	PG- Above	14 (46.7%)	21 (70%)	23 (76.7%)	23 (76.7%)		
Family type	Joint	10 (33.3%)	9 (30%)	8 (26.7%)	16 (53.3%)	7.557	.272
	Nuclear	16 (53.3%)	19 (63.3%)	18 (60%)	10 (33.3%)		
	Single	4 (13.3%)	2 (6.7%)	4 (13.3%)	4 (13.3%)		
Monthly income	5000-15000	13 (43.3%)	20 (66.7%)	14(46.7%)	13 (43.3%)	6.005	.423
	15000-45000	15 (50.0%)	09 (30.0%)	14 (46.7%)	13 (43.3%)		
	Above 45000	2(6.7%)	1 (3.3%)	2 (6.7%)	4 (13.3%)		
Length of Service	Less Than 2 yrs	9 (30%	8 (26.7%)	3 (10%)	8 (26.7%)	6.144	.407
	2 - 5 yrs	12 (90%)	17 (56.7%)	17 (56.7%)	15 (50%)		
	Above 5 yrs	9 (30%)	5 (16.7%)	10 (33.3%)	7 (23.3%)		

Table-2. Between Group Difference

Variables	Groups				f	p	Post Hoc
	Private[a] M ± SD	Public Sector[b] M ± SD	Govt.[c] M ± SD	NGO's[d] M ± SD			
Job Satisfaction	57.23 ± 7.59	60.43 ± 11.55	60.20 ± 5.33	59.83 ± 7.75	.942	.423	—
Personal Burnout	210.00 ± 120.27	212.50 ± 113.66	189.16 ± 86.52	232.50 ± 124.93	.747	.526	—
Work Burnout	275.23 ± 144.95	229.16 ± 145.04	185.00 ± 99.48	222.50 ± 160.59	2.116	.102	a > c
Client Burnout	218.33 ± 193.64	240.83 ± 159.26	157.50 ± 126.65	250.83 ± 175.36	1.917	.131	—
Total Burnout	703.56 ± 385.95	682.50 ± 349.88	531.66 ± 239.33	705.83 ± 401.00	1.709	.169	—

professionals of various sectors. The significance of this study also emerge from the fact that this is likely to lead to planning of effective strategies, to enable these professionals to lead a better and an overall healthier life.One may expect that the knowledge gained will help in building an understanding sufficient to alleviate and ultimately prevent burnout. The result of present study reveals that there was trend (.081) found in work Burnout by the multiple comparisons of all groups with Post Hoc Test by Bonferroni Method and there was no significant difference was found in the level of Job Satisfaction and in the degree of burnout in other areas. The findings are in agreement with the study conducted by Scheider and Vaught who compared 36 private sector employees and 68 public sector employees and found that there was no significant difference among the level of job satisfaction between public and private sector employees.[20]

Conclusion

The findings of the present study suggests that the level of job satisfaction and the degree of burnout were almost similar in all groups. In multiple comparisons of all groups with post hoc test by Bonferroni method a trend (.081) was found in the area of work burnout. It suggests that work burnout was higher in private sector professionals in comparison to the government sector professionals.

Limitation

The sample size of the study was small and hence the findings may not be generalized. Banking Sector personnel's should have also been included for comparison. Few others areas like coping, social support etc. should have been included to see the correlation as well as a regression analysis should also have been done to find out the contributing factors.

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Original Article

Mental Health Legislation in India: Need for revision or implementation?

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ABSTRACT:

Introduction: *Mental health is an important component of health with large number of people suffering from various mental illnesses. This group of people forms a vulnerable part of the society and thus arises the need for appropriate mental health legislation and its implementation.* ***Objective:*** *To examine the Mental Health Care Bill 2016 in the light of WHO guidelines to check how comprehensive it is and to compare it with the Mental Health act 1987.* ***Methods:*** *Scoring was done in WHO checklist comprising of 27 main issues for both MHA 1987 and current bill 2016. Additional scoring was also done for these legislations along with other existing legislations of the country. Scores were calculated as percentages and compared.* ***Results:*** *MHA conforms to approximately 56% of the WHO recommendations which was in striking contrast with 81% of MHCB. But, as both the laws were clubbed independently with the other existing legislations of the country, coverage of MHA increased to nearly 73% whereas that of MHCB was found to be 86%.* ***Conclusion:*** *Though there is a difference between MHA'87 and MHCB'16 in terms of comparison to the WHO mental health legislation guidance document, MHA'87 is not far behind in terms of coverage in line of the WHO guidance document. The real test will lie in implementation of the legislation rather than making changes in the legislation without implementing it fully.*

Keywords: *Mental health act, Mental health care bill, WHO guidelines on mental health legislation.*

Introduction

Mental health is an important component of health. WHO defines health as "a state of complete physical, mental and social well- being and not merely the absence of disease or infirmity". In India, at a given point of time, nearly 15 million people suffer from serious psychiatric illness, and another 30 million from mild/moderate psychiatric problems[1]. Mental illness take a toll on society's social functioning as well as lead to a great burden on country's economy.

People with mental illnesses are the vulnerable part of the society and suffer from a great variety of abuse and violation of their rights owing to the nature of their illness. It stops them from engaging in work and creative activities and lead a respectable life due to stigma and bias associated with these disorders. Thus appropriatemental health legislation is essential to protect these people from various abuses and to safeguard their fundamental rights.

Time and again various acts and policies have been formulated in this regard. The initial mental health legislations in India i.e. Indian Lunatic Asylum Act, 1858 and Indian Lunacy Act 1912 used custodial approach and were based on the concept of safety of society from lunatics with no consideration to protection of rights of such people. Gradually the experts felt the need for deinstitutionalization

and shift to community care as it was realized that the long term custodial care was neither possible nor desirable. It was also realized that the main aim of any mental health legislation should be to promote the mental health of the society and to safeguard the rights of people suffering from mental illness. Hence a new mental health bill was drafted in 1950 and was adopted in Rajya Sabha in 1986 though it could get President's approval only in May 1987. The act finally came into force in April 1993 as Mental Health Act 1987 which has been the active law till now. But even after so many years it has failed to achieve what it intended to. It has not been successfully able to reduce the bias against mentally ill patients. Furthermore patients with mental illnesses are not humanely treated at many places and law has failed to curb those inhumane practices. Owing to lack of awareness and superstitious beliefs family members of mentally ill fail to recognize their illness as illness. Even when they understand the illness fear of stigma and isolation from society prevents them from seeking professional help for treatment as well as their rights.

On 30 March 2007, India became the signatory of United Nations Conventions on the Right of Persons with Disabilities i.e. UNCRPD. It was then ratified by India in October 2007. It came into force from 3rd May 2008.[2] According to UNCRPD disability is a changing concept and people with disability shall include "those who have long-term physical, mental, intellectual or sensory impairments which in interaction with various barriers may hinder their full and effective participation in society on an equal basis with others".[3] It talked about the principles of dignity, non-discrimination and equality for people with disability and realized the importance of their inclusion and full participation in society. It brought the paradigm shift of approach and claimed that "Persons with disabilities are not to be viewed as "objects" of charity, medical treatment and social protection; rather as "subjects" with rights, who are capable of claiming those rights and making decisions for their lives based on their free, and informed consent as well as being active members of society." Being the signatory, India was obliged to bring changes in its laws in congruence with principles of UNCRPD and hence Ministry of Health and Family Welfare, Govt. of India drafted the Mental Health Care Bill 2011 which underwent multiple revisions.Finally, the Mental Health Care Bill 2013 was introduced in Rajya Sabha in August 2013 and got passed by the upper house of parliament in August 2016 as Mental Health Care Bill 2016.

In 2005, WHO published a resource book on mental health legislation and gave guidelines to check if legislation covers all areas comprehensively.[4]

The aim of this study was to examine the Mental Health Care Bill 2016 in the light of WHO guidelines to check how comprehensive it is and to compare it with the Mental Health act 1987.

Method

All the related documents were collected including Mental Health Act 1987 (MHA 1987),[5] Mental Health Care Bill 2016,[6] WHO Resource book on Mental Health Legislation and other existing legislations like Persons with Disability Act 1995,[7] Medical Termination of Pregnancy Act 1971,[8] & MTP Act (Amendment) 2002,[9] The Indian Medical Council Act, 1956,[10] The Code of Civil Procedure, 1908,[11] The Code of Criminal Procedure, 1973[12] and National Health Policy 2002.[13]

WHO resource book's checklist comprises of 27 main issues numbered A to Z followed by AZ. These issues are further subdivided into several points. As per the guidelines to use the checklist, each sub-point is to be allotted a score of 'a', 'b', or 'c', where 'a' means the point is adequately covered; 'b' means it is covered to some extent; and 'c' means it is not covered at all, in the legislation being studied. For the purpose of this study, 'a' was allotted a score of 1, 'b' of 0.5 and 'c' of 0.

MHA 1987 and MHCB 2016 were analyzed and results tabulated as per the checklist. The score of each sub-point was added to calculate the average score of each issue in the form of percentage. Scores of individual issues were compared in addition to comparison of total average score of the two documents.

Also percentage scores were calculated for both legislations when these were considered along with other existing legislations of the country.

Results

Analysis revealed that MHA conforms to approximately 56% of the WHO recommendations which was in striking contrast with 81% of MHCB.

APPENDIX:

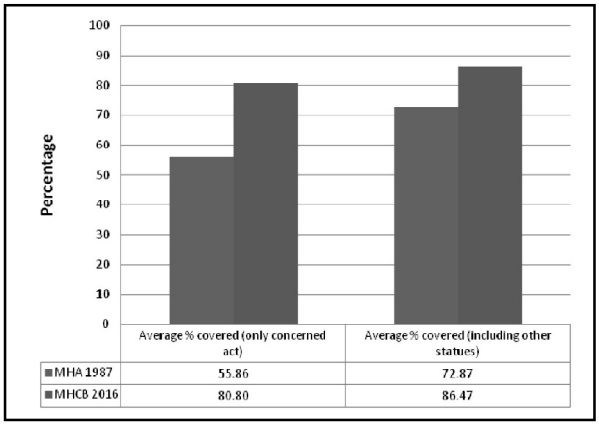
Table-1: Comparison in average percentage coverage of MHA 1987 and MHCB 2016

Legislative Issue	The Mental Health Act, 1987			The Mental Health Care Bill, 2016		
	% Coverage (Only Concerned Act)	% Coverage (Including other Statues)	Comments (If any)	% Coverage (Only Concerned Act)	% Coverage (Including other statues)	Comments (If any)
A. Preamble and objectives	75	75		100	100	
B. Definitions	58.33	58.33		75	75	
C. Access to mental health care	35.7	35.7		100	100	
D. Rights of users of mental health services	78.12	90.62	Few remaining points covered in MCI and State Medical Council Acts	100	100	
E. Rights of families or other carers	60	60		100	100	
F. Competence, capacity and guardianship	87.5	100	Also covered in Civil Procedure Code	75	100	Chapter on guardian has been removed and instead Nominated Representative has been made to provide supportive decision making, considering which it can be called 100% coverage
G. Voluntary admission and treatment	80	90	A clause on equitable treatment of patients with mental illness to patients with physical illness is not explicitly covered in MHA 1987 but National Health Policy 2002 states: Mental disorders can be treated by GDMO i.e. General District Medical Officer thus equating mental disorders with physical disorders	90	90	Neither law states that voluntary patients should be informed at the time of admission that they may only be denied the right to leave if they meet the conditions for involuntary care
H. Non-protesting patients	100	100		100	100	

Legislative Issue	The Mental Health Act, 1987			The Mental Health Care Bill, 2016		
	% Coverage (Only Concerned Act)	% Coverage (Including other Statues)	Comments (If any)	% Coverage (Only Concerned Act)	% Coverage (Including other statues)	Comments (If any)
I. Involuntary admission (when separate from treatment) and involuntary treatment (where admission and treatment are combined)	90.9	90.9		100	100	
J. Involuntary treatment (when separate from involuntary admission)	0	0		0	0	None covers this aspect
K. Proxy consent for treatment	66.67	66.67		100	100	
L. Involuntary treatment in community settings	0	0		0	0	
M. Emergency situations	71.43	71.43		100	100	
N. Determinations of mental disorder	100	100		100	100	
O. Special treatments	35	60	Various parameters regarding sterilization and abortion are included under MCI Act and MTP act	95	100	Considering the MTP Act also
P. Seclusion and restraint	16.67	66.67	Certain clauses included in MCI Act	58.33	58.33	
Q. Clinical and experimental research	66.67	66.67		66.67	66.67	
R. Oversight and review mechanisms	47.92	47.92		89.58	89.58	
S. Police responsibilities	100	100		100	100	
T. Mentally ill offenders	100	100		100	100	
U. Discrimination	100	100		100	100	
V. Housing	33.3	50	The article on equality from constitution	66.67		
W. Employment	0	75	The People with Disability Act, 1995	0	75	The People with Disability Act, 1995
X. Social security	25	100	The People with Disability Act, 1995	100	100	

Legislative Issue	The Mental Health Act, 1987			The Mental Health Care Bill, 2016		
	% Coverage (Only Concerned Act)	% Coverage (Including other Statues)	Comments (If any)	% Coverage (Only Concerned Act)	% Coverage (Including other statues)	Comments (If any)
Y. Civil issues	50	100	The People with Disability Act, 1995	100	100	
Z. Protection of vulnerable groups						
Ø Protection of minors	41.67	41.67		66.67	66.67	
Ø Protection of women	0	100	Right to Equality and General Hospital Rules	75	100	Right to Equality and General Hospital Rules
Ø Protection of minorities	0	66.67	Right to Equality	66.67	100	Right to Equality
AZ. Offences and penalties	100	100	100	100	100	
Average % Coverage	55.86	72.87		80.8	86.47	

As both the laws were clubbed independently with the other existing legislations of the country, there was a sharp decline in the gap. Coverage of MHA in this manner increased to nearly 73% whereas that of MHCB was found to be 86%. (Fig. 1)



Discussion

As is evident from the results of the study above, when considered in isolation it may appear that MHA 1987 poorly conforms to the international norms as advised by WHO, but, on a closer look when MHA 1987 is examined in conjunction with the other laws and policies of constitution, it is realized that it conforms considerably with the international guidelines despite being drafted years before WHO guidelines. Although the MHCB 2016 was drafted only recently and with due consideration to WHO guidelines, still it is only marginally better than the existing law in terms of guidelines. The proposed newer legislation for sure introduces certain new terminologies and concepts such as advance directives, nominated representatives and rights of persons with mental illness but a broader perspective shows that it has mainly consolidated the concepts related to mental illness from different places into one law whereas in the existing law they find place spread all over in the constitution.

Although MHA came into force in 1993 but it was implemented only half heartedly following directions from the Supreme Court in 2002 in CWP 334/2001 (Erwadi Case). Erwadi case highlighted the plight of mentally ill, abandoned patients which was prevalent at that time. Thereafter in its ruling Supreme Court asked the States and for the formulation of State Mental Health Authorities of which formulation was actually planned earlier in MHA itself but were not established.[14] The state and central mental health authorities who were entrusted with the task of development, direction, coordination of mental health services in states as well as by center continued to be without any budget till recent past in most of the states. Even after the Supreme Court directions no budgetary allocation was done for the purpose till now and was done only recently under National Mental Health Programme 2011. Thus, it seems that the basic

problem lies with the implementation.

In India, as compared to other domains of health, aspects related to mental health/disorders have seen a minimal growth. Even after nearly two decades, since the MHA came into force, there is lack of awareness concerning mental health in common public.[15,16] A lot of stigma is attached with the mental disorders and even in 21st century, the era of science and modernization, people have a lot of superstitious beliefs regarding mental illnesses.[17] Not only this, even the facilities available for persons with mental illness are far short of the requirements. Mental health care is a neglected area for both central as well as state governments. Inappropriate mental health financing is one of the major barriers.[18] The World Health Organisation (WHO) also reports that "without adequate financing, mental health policies and plans remain in the realm of rhetoric and good intentions".[19] In 2011-12, the central budget allocation for mental health was less than 1% of total health budget. Even this low budget is not properly utilized. In 2007-08 and 2008-09, less than half of the funds allocated in the National Mental Health Programme were actually utilized. Over the years, though, this has shown improvement with around 75% utilization but it is still insufficient compared to 98% utilization of overall health budget.[20]

The MHA'87 covers mostly the restrictive care settings such as the inpatient mental health facilities so that the most vulnerable patients are accorded the protection of law. While the mental health treatment in government general hospitals or in community on outpatient basis are deliberately excluded to develop along with general health care services.

The proposed MHCB 2016 covers the whole gamut of mental health services including rehabilitation. It seeks to regulate all mental health care services and thus runs the risk of curbing the development of services in private sector due to over regulation. It also risks alienating and secluding mental health services away from general health care services by making separate regulation, norm and licensing for mental health services.

A number of rights and services have been included in the MHCB without making any budgetary provisions. Thus, once again it runs the risk of not being adequately implemented.

Limitation

WHO guidelines mention scoring as 'a', 'b', and 'c' which means covered fully, to some extent and not covered at all respectively. The arbitrary scoring chosen for the purpose of study as 1, 0.5 and 0 may not denote true picture especially for score 'b'.

Conclusion

Though there is a difference between MHA'87 and MHCB'16 in terms of comparison to the WHO mental health legislation guidance document, this is due to the fact that MHCB'16 has been drafted post WHO guidance document and has used the document as a reference point. However, MHA'87 which was drafted since 1948 and passed in 1987 is not far behind in terms of coverage in line of the WHO guidance document.

The real test will lie in implementation of the legislation rather than making changes in the legislation without implementing it fully.

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Psychomicorobiology

Irritable Bowel Syndrome, Associated Microbiome and its Correlation with Psychiatric Disorders

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Introduction

Irritable bowel syndrome (IBS) is a group of symptoms including abdominal pain, bloating sensation and changes in the pattern of bowel movements without any evidence of underlying disease.[1] It is a functional bowel disorder without any structural or metabolic abnormalities that sufficiently explain the symptoms. The symptoms occur over a long period of time and significantly affect the quality of life and results in work absenteeism. Both patients and healthcare system incur huge costs towards its treatment. It's the most commonly diagnosed gastrointestinal disorder with a worldwide prevalence of 5-25%.[2]

Disorders such as depression, anxiety, chronic fatigue syndrome are commonly seen among patients with IBS. It is reported that at least one of these disorders is present in approximately 40 to 60 percent of IBS patients visited by physicians in gastroenterology clinics.[3] Although it is unlikely that psychiatric disorders are the single cause of IBS, they may be important cofactors in the development of the illness in susceptible people.

Previously IBS was thought to be a psychosomatic disorder. However, the study of pathophysiology has revealed alteration in the microbiota as a potentially relevant cause.[4,5]

Studies on animals have shown that disturbing the balance between beneficial and disease causing bacteria in an animal's gut can alter its brain chemistry. In humans, anxiety disorders are common in patients with disturbed gut flora. Studies have found that in IBS patients, the presence of dyspepsia is associated with H. pylori infection.[6] The bacteria Campylobacter jejuni has been shown to cause anxious behaviour in mice.[7] Infant mice which were periodically separated from their mothers showed reductions in Lactobacillus and Bifidobacterium spp., functional gut abnormalities, increased corticosterone levels, weight loss and depression. Treating the mice with Lactobacillus lowered corticosterone levels and gut abnormalities.[8] Hence, we review IBS and its association with psychiatric disorders and intestinal microbiota.

Pathophysiology

Irritable bowel syndrome (IBS) is a functional digestive disorder characterized by abdominal pain, bloating and altered bowel habits without any organic cause. It is defined by the ROME III criteria as presence of abdominal pain or discomfort for at least 2 days a week for the previous 3 months, accompanied by at least 2 of the following features: (a) it improvement with defecation, (b) it is associated with a change in the frequency of bowel movements, or (c) it is associated with a change in the appearance of the stool.[9] IBS causes a great deal of discomfort and distress, but it does not permanently harm the intestines and does not lead to a serious disease, such as cancer. It has a multifactorial pathophysiology with altered gut microbiota playing a very important role.

Dysbiosis: *Altered composition of the intestinal microbiota* – The gut microbiota is known to have direct bactericidal eûects by the production of bacteriocins and prevent the adherence of pathogenic bacteria to the wall of the gastrointestinal tract. Dysbiosis in the gut may facilitate the adhesion

of enteric pathogens in the human gut which can be associated with IBS symptoms.[10,11] The normal human gut microbiota comprises of Firmicutes and Bacteroidetes and changes in their relative numbers have been reported in IBS patients.[12] In IBS, luminal microbiota may play a key role in bloating and flatulence through carbohydrate fermentation and gas production. Bacterial fermentation of undigested carbohydrate leads to short-chain fatty acid production, with gaseous byproducts such as carbon dioxide, hydrogen, and methane. The metabolites and toxins of luminal microbiota can modulate the host immune system.[13] A study showed adult patients with IBS had a two-fold greater ratio of Firmicutes to Bacteroidetes than controls, resulting from an approximately one-and-a-half-fold increase in the numbers of Dorea, Ruminococcus, and Clostridium spp. In addition, they observed a two-fold decrease in the number of Bacteroidetes and a one-and-a-half-fold decrease in the numbers of Bifidobacterium and Faecalibacterium spp.[14]

Altered metabolic activity of the intestinal microbiota: Various studies have shown that in IBS, the altered intestinal microbiota may produce excessive amounts of gas by fermenting poorly absorbable carbohydrates (FODMAPs, fermentable oligosaccharides, disaccharides, monosaccharides and polyols), which may cause abdominal pain, bloating, flatulence, and distension. Also, this altered fermentation could increase the production of SCFAs, which would then lead to release of 5-HT from the intestinal mucosa.[15] It has been demonstrated that the release of 5-HT initiated high-amplitude, propagated colonic contractions, accelerated intestinal transit, and increased gut motility, all of which may contribute to IBS symptoms, suggesting that fermentation products play a potential role of in contributing IBS symptoms.[16]

Post-infectious IBS (PI-IBS) – Post-infectious IBS (PI-IBS) supports a possible role of perturbations of the gut microbiome by pathogens in the development of altered brain gut interactions associated with IBS like symptoms. It is the strongest evidence which establishes the importance of microbiota for the development of IBS, and may present after a bout of gastroenteritis caused by viral, parasitic or bacterial infections. Various prospective studies have demonstrated that 3%-36% of enteric infections lead to new, persistent IBS symptoms. Enteric pathogens such as Staphylococcus aureus, Shigella, Clostridium perfringens, Bacillus cereus, and Campylobacter could potentially increase the risk of developing PI-IBS by at least six-fold.[17,18,19] Biological factors such as severity and duration of initial infection, as well as age and gender are additional risk factors of developing PI-IBS. Psychological factors include a high somatization score in affected patients, anxiety, and the presence of a major psychosocial stressor around the time of the infection. An episode of gastroenteritis by pathogens like C. jejuni and Shigella infections will cause an inflammatory response of the gut, depletion of intestinal macrophages, which could potentially hamper the clearance of pathogens and may potentially lead to an intestinal dysbiosis.[20,21] Similarly, studies have shown enterohemorrhagic E. coli to have deleterious impacts on the epithelial barrier,which raise the risk for bacterial breach to the epithelial mucosa and subsequent inflammation.[22,23] Hence, a previous gastroenteritis infection may temporally cause changes to the immune system as well as the balance of the gut microbiota, resulting in dysbiosis.

Intestinal Barrier Dysfunction and Altered Immune Response. The gut microbiota community plays an important role in regulating the inflammatory and immune response. Any alterations in the gut microbiota due to enteric infections, antibiotic therapy or acid suppressive treatment lead to activation of both the innate and adaptive immune responses.[24] In IBS patients, however, the interactions between enteric immunity and commensal and/or pathogenic microbes were found to be dysregulated. Bacteroidetes and Firmicutes have been shown to induce T regulatory cells and inhibit Th17- mediated inûammation. Thus, the gut microbiota plays an important role in the maintenance of homeostasis of various subpopulations of T cells: regulatory T cells (Tregs), T helper 1 (Th1), and T 17 (Th17) cells in the gut.[25,26] Low-grade inûammation in the intestine in IBS patients is associated with the activation of T lymphocytes and mast cells, increased expression of proinûammatory cytokines such as IL-6 and IL-8, and elevated levels of IL-1β, TNF-α, and IL-8 in peripheral blood mononuclear cells. Various studies have shown altered TLR expression in IBS patients compared to healthy controls with specific increases in TLR2, TLR4, and TLR5 and decreases in TLR7 and TLR8.[27,28] Thus, linking IBS to an altered activation

of the immune system in response to microorganisms of the gut. Also, defensins such as human β-defensin,[2] antimicrobial peptides secreted by colon epithelial cells in response to proinflammatory cytokines or pathogenic micro-organisms, have been shown to be increased in IBS patients.[29] These increased interactions of immuno-logic components with the microbiota could eventually lead to the mucosal inflammation in IBS.

Depression and IBS

Depression is a significant contributor to the global burden of disease and affects people in all communities across the world. Depression is estimated to affect 350 million people.[30] Depression is the most diagnosed psychiatric disturbance in IBS patients. Several studies have reported an increased prevalence of IBS in patients with major depression. Females with IBS have abnormal increased tryptophan degradation along the kynurenine pathway due to up regulation by proinflammatory cytokines. The rapid degradation of tryptophan depletes tryptophan and serotonin and produces toxic metabolites. This mechanism could explain a possible association between IBS and depression.[31] A study done with an aim to report the history of anxiety and depression in IBS patients showed approximately half of IBS patients reported anxiety and/or depression. IBS-C patients experienced higher proportion of psychological disorders compared to other categories of IBS.[32] Similar association was shown by another study which was done on eighty six patients of IBS. 96.5% of the studied patients actually had different psychiatric illness. Among them generalized anxiety disorder (24.4%), depressive illness (27.8%), somatoform disorder (12.7%) and hypochondriasis (10.4%) were the predominant abnormalities. New onset of IBS patients exhibited higher prevalence of generalized anxiety disorder (42.8%) in comparison to longer duration of illness. Depressive illness (44.4%) was substantially higher in constipation-predominant IBS than other forms.[33]

Anxiety disorder and IBS

Several studies done on IBS and co- morbidities have shown a direct association between anxiety disorder and IBS. A cross sectional study showed approximately half of IBS patients reported anxiety and/or depression.[32] In humans, anxiety disorders are common in patients with disturbed gut flora. The bacteria Campylobacter jejuni has been shown to cause anxious behaviour in mice.[7] Studies have found that in IBS patients, the presence of dyspepsia is associated with H. pylori infection. Helicobacter pylori (H. pylori) infection is the main pathogenic factor for upper digestive tract organic diseases. In addition to direct cytotoxic and proinflammatory effects, H. pylori infection may also induce abnormalities indirectly by affecting the brain-gut axis, similar to other microorganisms present in the alimentary tract.[6]

Panic disorder and IBS

It is a frequent psychiatric disorder with a prevalence between 1.5% and 3.5%. 34 Many studies have shown high comorbities between IBS and panic disorder. One explanatory model is represented by the functional relationship between the central nervous system (CNS) and enteric nervous system. Some of the studies also implicated a dysregulation of hypothalamic-pituitary-adrenal axis may also lead to stress vulnerability.[35] Patients with IBS and anxiety disorders present abnormally elevated basal cortisol levels and altered immune function (increased cytokines levels)[36]

Post-traumatic stress disorder

Post-traumatic stress disorder is defined as an exposure to a traumatic physical or emotional event that causes re-experience of the occurrence, avoidance of triggers, development of negative thoughts and moods, and chronic hyper-arousal symptoms.[37] Often PTSD has been seen as a result of childhood sexual abuse. Patients with functional gastrointestinal disorders are more likely to have experienced severe abuse or life threat than those with structural disease. A number of studies have shown a relationship between a history of abuse and IBS. PTSD had a strong independent association with IBS in a study done on African Americans.[38]

Treatment of IBS

1. **Probiotics -** Probiotics are live or attenuated microorganisms which, when administered in suûcient quantities, have been shown to improve gut epithelial integrity, as well as alleviate the symptoms of IBS.[39] Administration of probiotics

have shown to reduce the symptoms of IBS, suppress proinûammatory cytokines, and promote the integrity of the intestinal barrier.[40] In a separate study, patients with IBS were treated with Bifidobacterium infantis or Lactobacillus salivarius (1E10) in malted milk or malted milk alone (as a placebo) for 8 weeks; there was a significant reduction in abdominal pain, discomfort, bloating, distension, and bowel movement difficulty in patients who received Biûdobacterium infantis compared with those who had placebo.[41] A randomized controlled trial showed that the oral administration of VSL#3 which contains a mixture of diûerent bacterial species, twice daily for 8 weeks, signiûcantly reduced abdominal bloating in a subgroup of diarrhea predominant IBS patients, when compared with placebo.[42] Many clinical trials have investigated the therapeutic beneûts of probiotics in patients with IBS. However, diûerences in duration of therapy, heterogeneity in species or strains of selected bacteria, and diûerences in characteristics of the enrolled patients have resulted in inconsistent results.

2. **Prebiotics -** Prebiotics are nondigestible dietary supplements that aûect the host by stimulating the growth of beneûcial bacteria in the colon. Prebiotics have the capability to stimulate only microbes which are already residing in the gut.[43] Prebiotics are fermented by host bacteria and have been associated with a reduction in the level of triglyceride, improvement of the postprandial glucose level and a reduction in intestinal permeability.[43,44] The fermentation of prebiotics leads to the production of SCFAs such as butyric acids, which can serve as energy source for intestinal epithelial cells.[43] Commonly used and tested prebiotics are nondigestible oligosaccharides such as fructo-oligosaccharides and galacto-oligosaccharides. Currently, there have not been many randomized controlled trials regarding IBS and prebiotics. A potential limitation of prebiotic treatment is that prebiotics undergo fermentation and could produce bloating and ûatulence.
3. **Diet -** An association between diet and symptom development in IBS is reported frequently but its mechanisms are not clearly defined. The composition of the gut microbiota has been shown to be responsive and adaptable to the diet of the host organism. The composition of the microbiota in babies change after weaning, and in adults it varies according to geographic regions due to differences in the food consumed. However, whether a change in the diet can directly affect the microbiota in IBS is not clear. This is partly due to the lack of well-designed, controlled trials that investigate the effects of diet on IBS.
4. **Antibiotics –** Antibiotics are known to diminish the protective commensal microbiota, thus favouring the multiplication of pathogenic species which may lead to dysbiosis and potentially even cause symptoms of IBS. However, nonabsorbable antibiotics such as neomycin,[45] and rifaximin,[46] have been seen to have beneficial effects, providing partial alleviation of IBS in general and bloating in particular. However, data on the long-term effects of antibiotics in IBS are limited. Furthermore, information on the optimal dose of antibiotics, and predictors of treatment success and failure are needed to confirm the benefit of this type of treatment.
5. **Psychotropic medications–** treating comorbid psychiatric disorders such as major depression or anxiety disorders with antidepressants or anxiolytics can reduce the impairment associated with the bowel disorder greatly in some patients. Antidepressants are used in IBS management in low doses for their neuromodulatory effects. Even people with irritable bowel syndrome who aren't depressed can get relief from antidepressants. The drugs can help block how the brain processes pain. The American College of Gastroenterology prescribes two types of antidepressants that can help IBS symptoms:
    1. Tricyclic antidepressants like amitriptyline (Elavil, Vanatrip), desipramine (Norpramin), or nortriptyline (Pamelor).
    2. Selective serotonin reuptake inhibitors (SSRIs), like citalopram (Celexa), paroxetine (Paxil), or sertraline (Zoloft).

Conclusion

IBS is the most common functional GI disorder and high levels of co-morbidity with psychiatric illness

especially anxiety and depressive disorders have been related. A proper psychiatric evaluation is necessary for successful alleviation of the bothering symptoms of such incurable functional illness. The management of IBS should also include treatment of the psychiatric comorbities in the patient. The response of irritable bowel syndrome to standard medical treatment, however, is unsatisfactory and many remain troubled by symptoms for long term. However, a wide spectrum dynamic approach involving the management of dysbiosis along with dietary modification and mental wellbeing of the patient will have promising results.

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Psychophysiotherapy

Management of Chronic Pain with Psychophysiotherapy

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The current definition of pain, established by the International Association for the Study of Pain (IASP) defines pain as "an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of tissue damage, or both."[1] Chronic pain is typically differentiated from acute pain based on its chronicity or persistence, its physiological maintenance mechanisms, and/or its detrimental impact on an individual's life. It can be best understood from a biopsychosocial perspective through which it is viewed as a complex, multifaceted experience emerging from the dynamic interplay of a patient's physiological state, thoughts, emotions, behaviors, and socio-cultural influences. The specific timeframe for chronic pain is variable and often difficult to ascertain but for ease of classification, certain guidelines suggest that pain persisting beyond a month time window is considered chronic pain.[2]

Pain perception—the conscious recognition and awareness of a painful stimulus—is modulated and modified by many psychological and personality-related factors. These can include previous pain experiences, emotions and cognition, somatization and catastrophizing, the presence of acute and chronic stressful life events, fatigue, anxiety, fear, boredom, and anticipation of more pain. Pain perception is also influenced by socioeconomic factors such as social support, acceptance, incentives, education, occupation, and quality of life.[3] Persistent pain can have profound and widespread effects upon a patient's quality of life. Mobility, physical functioning, sleep, and concentration are typically affected by pain.[4] Continuous, unrelieved pain affects the psychological state of both patient and family members, leading to common psychological responses such as anxiety and depression. The inability to escape from pain can create a sense of helplessness and even hopelessness, which may predispose a person to chronic depression.[5]

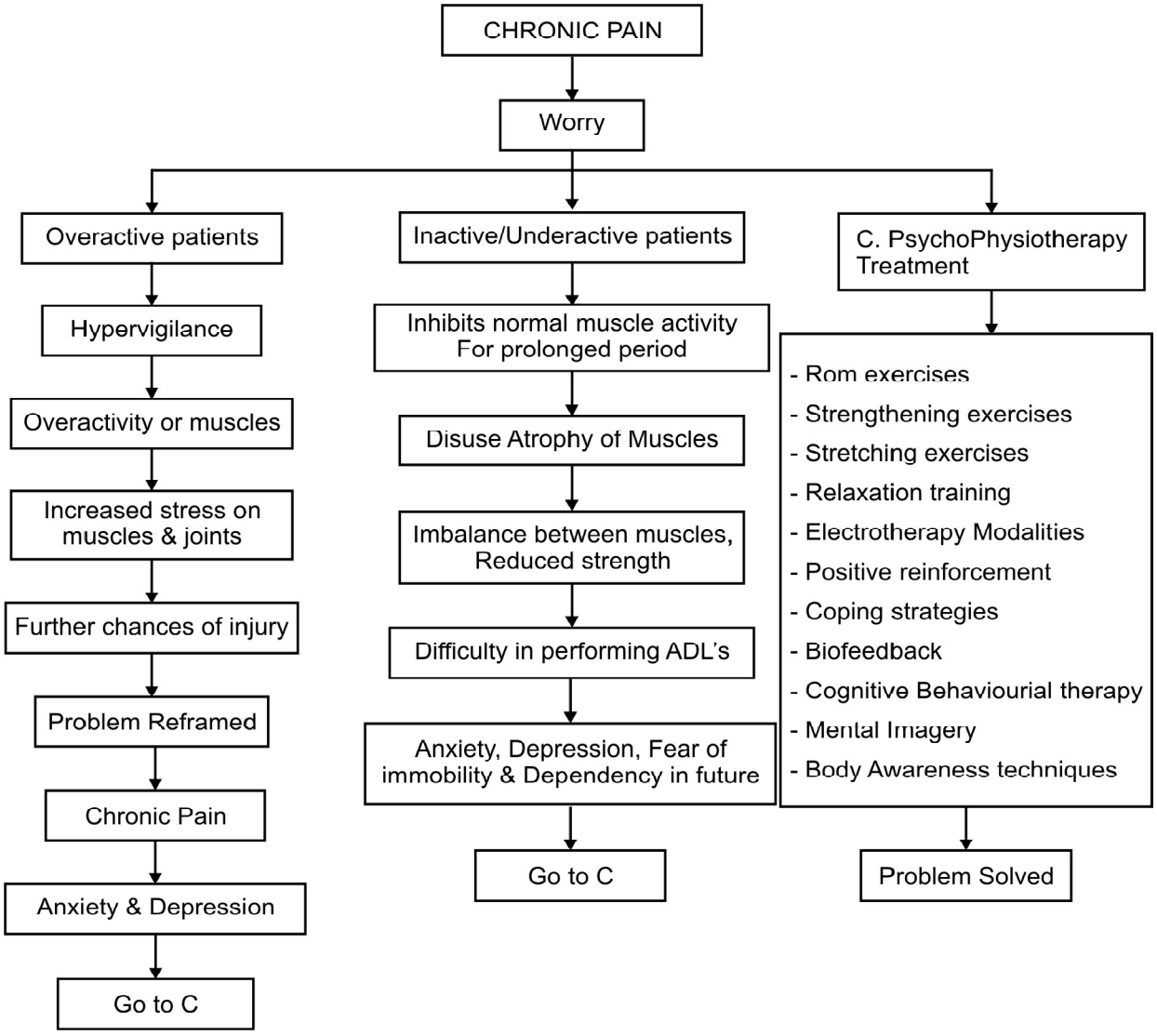
Psychological factors are central to the experience of pain and for treatment delivered within a biopsychosocial model, which incorporates sensory, cognitive, emotional, behavioural and environmental factors that interact to determine how pain is experienced, expressed and managed. It is important to stress that psychological factors do not 'cause' pain directly, but contribute to a person's perception of pain and its effects and their response to pain (including seeking healthcare) and treatment.[4] The subjective nature and reliance on self-report makes pain the most challenging of all symptoms to treat. Many of these patients are diagnosed with reactive disorders including depression, anxiety, somatisation, personality disorders and other non-specific issues like emotion, anger and loss of self-esteem. So psychological abnormalities, diagnosis and management has become an integral part especially in interventional pain management.[6] Atkinson et al and Asmundson et al have shown 31% - 50% chronic pain patients had associated anxiety disorder and phobic disorders.[7] Manchikanti et al have claimed that for chronic low backache, depression may precede or follow onset of pain.[8] Stress is commonly seen in chronic pain patients. Patients react to stress in different ways like anxiety, depression and anger. Depressive disorders are commonly associated with chronic pain. Reactive form of depression is when the patient experiences poor sleep and concentration

and lack of enjoyment along with chronic pain. Anxiety and worry often accompany pain but this is not synonymous with general anxiety disorder.[6]

Physiological Evidence

Neurobiological evidence suggests that mood and chronic pain are connected via the serotonin and noradrenalin neurotransmitter pathways. A malfunctioning of the descending serotonergic and noradrenergic pathways could allow routine sensory input to be interpreted as uncomfortable or even painful. Studies investigating the direction of the association between pain and depression suggest that it is the stress of living with chronic pain that causes depression but there is also evidence that pain develops secondary to depression through increases in pain sensitivity and that high depression scores result in a greater risk of developing chronic pain.[9]

In a systematic review of studies looking at the psychological factors associated with knee pain, researchers found strong evidence for a positive association between depression and knee pain in adults. The emerging evidence on pathogenesis of depression suggests that it is associated with dysfunction in the inflammatory cytokine production as a response to stressors, dysregulation of the autonomic nervous system, and destabilizing effect on hypothalamic-pituitary-adrenal axis. Each of these mechanisms also contributes to the development of chronic pain syndrome. These findings indicate that physiologic similarities exist between depression and chronic pain.[10]



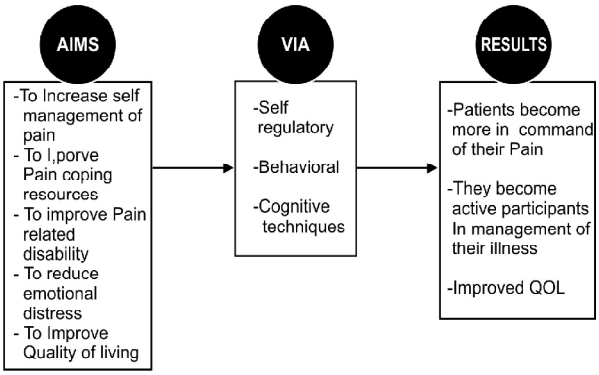
Treatment

Conventional Physiotherapy treatment of Chronic Pain includes

- Pain reducing Electrotherapy modalities like SWD, IFT, US, TENS etc
- Postural correction and education
- Strengthening of weak muscles along with stretching of tightened muscles to maintain proper muscle balance
- Various mobilization and manipulation techniques

Current psychological approaches to the management of chronic pain include interventions that aim to achieve increased self-management, behavioral change, and cognitive change rather than directly eliminate the locus of pain. Since the interaction time between Physiotherapist and the patient is quite long, psychological counseling regarding his/her problem can be well undertaken by the Physiotherapist. Benefits of including psychological aspects in Physiotherapy treatment to the management of chronic pain include:

- increased self-management of pain
- improved pain-coping resources
- reduced pain-related disability and
- reduced emotional distress



This can be achieved via a variety of effective self-regulatory, behavioral, and cognitive techniques.[2] Psychological approaches are based on a normal model rather than a disease model of human behaviour. They address successful or unsuccessful attempts to adapt to various circumstances such as illness, major life change, loss of valued activities and roles, and repeated failed treatments. A great deal is known about how humans learn and unlearn behaviour. In Chronic pain this knowledge is applied to the physical, practical and psychological habits associated with chronic pain and to the accompanying fears, depression and other mood problems.[11]

Psycho-physiotherapeutic Techniques

Patient Education. Accurate, authoritative and specific information can be very powerful against fears and anxieties. The physiotherapist provides information on subjects associated with the neuro-musculoskeletal system - effects and dangers of disuse, the process of healing, and the health needs of different joint structures. Patients overcome their fears and unhelpful beliefs not by repeated reassurance but by learning self-reassurance; they reassess their expectations of their bodies; challenge misunderstandings and myths, and gain confidence while experiencing improvement. Education sessions therefore need to be interactive, in order to listen to patients and allow them to express their misapprehensions.[11]

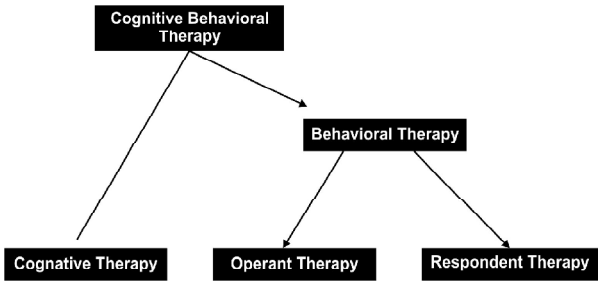
Biofeedback

Biofeedback is a learning technique through which patients learn to interpret feedback (in the form of physiological data) regarding certain physiological functions. For instance, a patient may use biofeedback equipment to learn to recognize relaxation training. The focus of relaxation training is to reduce tension levels (physical and mental) through activation of the parasympathetic nervous system and through attainment of greater awareness of physiological and psychological states, thereby achieving reductions in pain and increasing control over pain. Patients can be taught several relaxation techniques and practice them individually or in conjunction with one another, as well as adjuvant components to other behavioral and cognitive pain management techniques.[2]

Cognitive Behavioral Therapy

Over the past three decades, cognitive-behavioral therapy (CBT) has become a first-line psychosocial treatment for individuals with chronic pain. Evidence for efficacy in improving pain and pain-related problems across a wide spectrum of chronic pain syndromes has come from multiple randomized controlled trials.[5] Cognitive Behavioural

Therapy (CBT) is a method that can help manage problems by changing the way patients would think and behave. It is not designed to remove any problems but help manage them in a positive manner.[12]



In chronic pain management, the components used in Cognitive Behavioral therapy are operant learning, the goal-setting approach with its emphasis on systematically paced activity, the application of practical coping strategies such as relaxation, and cognitive change. This is done by activation (to increase positive emotion), relaxation and positive psychology. The aim is to help the patient cope better with problems. Patients need to make informed decisions, sharing and eventually shouldering responsibility for problem-solving in their own environment.[13,14]

Children and adolescents. King et al used CBT to treat children and adolescents with chronic and recurrent pain problems, which are very common in this age group. According to Palermo etal, frequently applied techniques include relaxation training, parental operant behavioral strategies, and biofeedback; a few studies have also included cognitive techniques.

Older adults. The prevalence of chronic pain conditions in adults increases across the life span. Therapies based on cognitive-behavioral principles hold much appeal in older adults given their favorable safety profile (minimal risks, especially compared with the well-established risks of alternative pain therapies such as opioid medication and non-steroidal anti-inflammatory drugs and emphasis on self-management skills. Furthermore, CBT skills for improving ability to manage pain and reduce emotional distress may well have benefits for common comorbid conditions such as diabetes and cardiovascular disease.

Individuals with neurological conditions. Chronic pain is common among individuals with neurological conditions such as traumatic brain injury (TBI), spinal cord injury, multiple sclerosis, neuromuscular disease, stroke, or HIV/AIDS and typically results in additional disability and multiple sclerosis. Studies by Ehde et al and Heutink et al support the feasibility and potential efficacy of such treatments, but larger, more rigorous trials are needed.

Physiotherapy treatment has three main aims for behavioural change: initiating and increasing desired behaviours, maintaining these behaviours, and decreasing and/or stopping undesired behaviours. Learning new skills or re-learning old skills can be brought about by applying learning theory. Skinner's principles can be applied to patients' behavior and behaviour to be encouraged, e.g. walking without aid or increasing knee flexion through use and exercise, is reinforced initially by frequent praise from the therapist, but then by the patient, by a system of reward or ideally by their own sense of enjoyment or achievement. If a patient only stops an exercise at the point where he or she is in increased pain, and is frightened, this makes for an aversive experience rather than a reinforcing one.

Patients may need a behaviour such as an exercise explained and/ or demonstrated to them first (modeling), and it is likely that patients will improve faster and be less anxious in a physiotherapy setting where they observe reinforcement being used with other patients.[13] Using the goal-setting approach links behaviour change and treatment goals to the patient's longer-term goals by means of pacing, a systematic approach which provides graded exposure for feared activities. Pacing from modest baselines is incompatible with overactivity/ underactivity cycles, the pattern shown by patients who alternately push hard and then are unable to keep going.[15]

Relaxation

Relaxation is usually used in conjunction with other treatment modalities and can take on a number of forms such as spiritual or non-spiritual meditation, progressive relaxation or muscular contraction and relaxation, even imagery.[16] One way in which relaxation therapy may work is to reduce the effect of stress on the body restoring normal equilibrium within the body systems.[17] Deep breathing

exercises, Diaphragmatic breathing, Jacobsons relaxation techniques, Meditation etc can be done for relaxation.

Cognitive skills training

Patients learn to identify factors that induce stress and what they actually experience emotionally, behaviorally and physically when they have pain/ stress. Self-regulation of pain depends on the patients specific way of dealing with pain, adjusting to pain, reducing or minimising pain through coping strategies, thus being able to enhance his/her control over pain and associated symptoms and engage in everyday activities. Self efficacy beliefs are influenced by past success / failure in managing pain.[18]

Self-Management of Pain

The self-management model of chronic pain care involves patients in their own care and is supported by strong evidence for efficacy. Self-management is defined as actions taken by the patient to manage or minimize the impact of a chronic condition on everyday life. The basic tenets of self-management include:

- Active participation by the patient
- Treatment of the whole person, not just the disease
- Empowerment of the patient (NIH, 2013)

Self-management approaches include talking to friends, searching the Internet, limiting activity, and attending classes or programs related to pain management and body mechanics. Self-management modalities can include exercise, ice, heat, devices such as cushions and supports, and the use of OTC medications. In many cases, self-management is highly successful.[19]

Body Awareness therapy

Body Awareness therapy is mainly used for treatment of diseases where disturbances in body awareness are an important part of the pathological picture.[20] Gustafsson et al observed that after one year of follow up, patients increased their awareness of how to use their bodies with less muscle tension and a more functional pattern of movement. They found that patients were able to decrease the negative consequences of chronic pain, e.g. Increased muscle tension.[21] The development of stress related disorders can be described as a process over years with symptoms of fatigue and musculoskeletal pain diagnosis e.g. Persistent pain, Fibromyalgia, chronic fatigue syndrome and emotional exhaustion.[20]

Conclusion

Chronic pain is a complex condition with physical, social and psychological components, which can impact significantly upon physical, emotional and social wellbeing disability thereby causing loss of independence and poor quality of life (QoL).Providing psychologically oriented Physiotherapy treatment simply utilize psychological principles. There is a growing need to translate these ideas into useful clinical tools and interventions for widespread dissemination. Psychological interventions range from simple techniques involving communication skills to advanced methods requiring considerable training and practice under supervision. Physiotherapy utilizing a broad scope of practice can safely and cost-effectively support and guide people with long term pain towards the best possible quality of life. Thus, although we encourage application, we also believe that professional competency is warranted.

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Psychophysiotherapy

Rehabilitation of Myocardial Infarction: Focus on Psychophysical Aspects

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Cardiovascular diseases (CVD) have been leading cause of morbidity and mortality in India. It is the first among top 5 causes of deaths in Indian population.[1] Within the spectrum of Coronary heart diseases, MI is the leading cause of death.[2] The risk factors of MI are divided into certain categories. The risk factors are high blood pressure, diabetes, lack of exercise, smoking, obesity, high blood cholesterol, poor diet, and excessive alcohol intake. One of the categories is psychosocial factor i.e. chronic stress, Type A behavioral pattern, fast paced life, inability to cope, anxiety and depression.[3] The physical and psychosocial consequences of ischemic heart diseases result in considerable impairment of quality of life in all the dimensions of both physical and mental aspects. Intense anxiety is often listed as the major psychological response to Myocardial Infarction (MI).[3] Psychological responses after MI like anxiety, distress and depression also predict decreased health related quality of life after 8-12 weeks.[4] Some other psychological reactions of patients after MI are low mood, sleep disturbances, irritability, poor concentration and memory and acute awareness of minor somatic sensation or pains.[2]

Treatment Strategies

The treatment strategies to improve prognosis of MI includes public health campaigns to improve awareness and early reporting of cardiac symptoms.[5] Secondary prevention is an important part of the contemporary care of patients with CHD.[2] Cardiac rehabilitation refers to coordinated multifaceted treatment strategies to optimize a cardiac patient's physical, social and psychological function in addition to stabilizing, slowing down the progression of the underlying atherosclerotic process, thereby reducing the mortality and morbidity.[2] Treatment also includes drug therapy like beta blockers, aspirin, ACE inhibitors and warfarin.[5]

Psychological Treatment

Following MI, the psychological support is focused on the secondary prevention, modification of behavioral patterns that are harmful to health and reduction of anxiety and stress. Relaxation exercises (progressive relaxation and qigong) can improve mental functioning and reduce the levels of anxiety with improvement in self-perceived quality of life and somatic functioning by reduction in blood pressure and heart rate.[3] Studies have demonstrated a reduction varying from 40 - 70 % in the prevalence of depression, anxiety and hostility after cardiac rehabilitation.[2] According to Linden et al, addition of psychosocial treatment to standard cardiac rehabilitation program result in decreased anxiety and depression, in addition to certain biological risk factors.[4,6] Improvements in psychological wellbeing, as reflected by reductions in depression score and tension/anxiety scores.[7] Dixhoorn et al observed the effects of breathing and relaxation therapy on rates of cardiac events and cost effectiveness in past MI patients over 5 years and observed that the disease course after MI was influenced favorably by giving relaxation therapy in addition to cardiac rehabilitation.[8]

Physical Therapy Rehabilitation

The metabolic, cardiovascular, autonomic, and anti-inflammatory benefits of a physically active lifestyle have led many researchers to suggest

exercise training (ET) as an important non-pharmacological tool in the prevention and treatment of CVD. One of the most important adaptations to the ET, generally associated with reduced mortality rate, is the improvement in autonomic nervous system regulation.[9] Exercise training improves functional capacity and quality of life in patients with coronary artery disease.[10]

Physiotherapy rehabilitation includes education, exercises and risk factor modification. Numerous studies have proven the efficiency of exercises in MI patients. Richard et al observed that after cardiac rehabilitation, patients showed improved exercise capacity, levels of triglycerides and high density lipoproteins. There was also improvement in depression, behavioral and quality of life parameters.[11] The autonomic nervous system and inflammatory response play an important role in cardiac and peripheral dysfunctions after MI. Exercises are associated with increased vagal tone/ modulation along with decrease in sympathetic tone/ modulation and inflammatory profile after MI.[9] Exercises can improve several cardiovascular and non-cardiovascular parameters, such as glucose metabolism, skeletal muscle function, oxidative stress, pulmonary circulation, vascular function, ischemia-reperfusion lesion, and ventricular remodeling.[10] Exercise training improves myocardial perfusion and cardiovascular function in coronary artery disease. The improvement might be related to a correction of endothelial dysfunction as well as a promotion of anti-inflammatory mechanisms.[12] Regular exercises have proven to protect against chronic and acute coronary disease. It is believed that regular exercise operates by the reduction of several risk factors related to cardiovascular pathologies, dyslipidemia, including high blood pressure, obesity, insulin resistance, and autonomic dis-regulation.[13] Physical training can also decrease vascular resistance and induce structural adaptations in the coronary tree (i.e. increased number of capillaries and number and size of arteries and arterioles), thus enhance the blood transport capacity at this level.[13] The underlying mechanisms associated with improved inflammatory profile after exercises in patients after an ischemic event is yet to be fully understood. The anti-inflammatory effects of exercise could be due to three possible mechanisms - reduction in visceral fat mass, reduced expression of toll-like receptors on monocytes and macrophages and increased production and release of anti-inflammatory cytokines from contracting skeletal muscle (myokines).[9] Various studies have demonstrated that regular exercise is beneficial for the cardiovascular system as it decreases the incidence of myocardial infarction and increases the chances of survival after coronary events.[13] Worcester et al compared the exercise performance of MI patients with low and high intensity exercises after 3 weeks of MI and observed that light exercises can also produce a higher level of fitness and a greater improvement in occupational adjustment.[14] In study of Dugmore et al, 62 patients were randomly allocated to a regular weekly aerobic training programme, three times a week for 12 months, and compared with 62 matched controls followed by a five year follow up with questionnaire/ interview. They observed improvement in cardio-respiratory fitness, psychological status, and quality of life by regular and supervised prolonged aerobic exercise.[7] In patients with ST segment elevated MI, after 3 weeks of regular symptom limited exercise training over three weeks, Brehm et al observed increased left ventricular ejection fraction at peak exercise, improved cardiovascular capacity (exercise spiroergometry) and enhanced mobilization and increase migration capacity of Circulating Progenitor Cells from bone marrow into peripheral blood which is associated with improved cardiac function and cardio-respiratory condition.[12]

Exercise Program

After MI, during inpatient rehabilitation the primary goal is to mobilize the patient as soon as he/ she is clinically stable. During the first day the patient is made to sit at the edge of the bed and then gradually mobilized throughout the stay. Initially the patient should walk with in the room at first then followed by 2-5 minutes in corridor for 3-4 times a day.[2] The guidelines for inpatient treatment are given in Table 1.[2] The ACSM guidelines to modify or terminate the phase I or inpatients exercise are given in Table 2.[15]

Before hospital discharge or shortly after discharge, the patient with recent acute MI should undergo standard exercise testing (submaximal after 4 to 7 days or symptom limited at 10 to 14 days). This is done to stratify risk for a subsequent cardiac

event, evaluate the efficacy of the patient's current medical regime and assess the patient's functional capacity and ability to perform tasks at home and work.[16] The outpatient rehabilitation starts after discharge from hospital. They start 2-4 weeks after the event depending on the severity of MI and patients condition.[2] According to the AHA guidelines for management of patients with MI, the patient should be encouraged to participate in a formal rehabilitation program and should perform 20 minutes of exercise at the level of brisk walking at least three times a week.[16] The guidelines for outpatient rehabilitation are given in Table 3. The contraindications to exercise during cardiac rehabilitation are given in Table 4. Resistance training can be started after discharge from hospital with 10 to 15 repetitions of 3 to 5 lb weight and progress to 5-7 lb before the 6 week symptom limited graded exercise testing. Patient should perform 8 to 10 exercises involving major muscle groups to be performed a minimum of two times per week.[15]

Table-1. Guidelines for mobilization of inpatients after MI[2]

Frequency	Early mobilization-2-4 /days
Duration	Intermittent bout lasting 2-5 minutes Intensity Post MI- Resting HR+ 20 bpm or less than 120 bpm RPE – less than 13 on 6-20 borg scale
Type of exercise	Walking

*bpm – beats per minute

*RPE- Rate of Perceived Exertion

Table-2. Guidelines to terminate/modify phase I cardiac rehabilitation[15]

1. Fatigue
2. Light headedness, confusion, cyanosis, ataxia, nausea, dyspnea or any other peripheral circulatory insufficiency
3. Onset of angina with exercise
4. Symptomatic supraventicular tachycardia
5. Ventricular tachycardia (three or more consecutive premature ventricular contractions (PVC)).
6. ST segment displacement (3mm)horizontal or down sloping from the rest.
7. Excessive Hypotension (> 20 mm Hg drop in systolic BP during exercise)
8. Exercise induced left bundle branch block
9. Excessive BP rise (systolic BP $\geq$ 220 mmHg or diastolic BP $\geq$ 110 mmHg)
10. Inappropriate bradycardia (drop in HR more than 10 beats/minute) with an increase or no change in work load.
11. R ON T PVC
12. Frequent multifocal PVCs (30 %of the complexes)

Table-3. Guidelines for outpatient exercise prescription for patients after MI[15]

Prescription	Phase II (Discharge to 3 months)	Phase III (After 3 months)
Frequency	1-2 times a day	3-5 times/week
Duration	20-60 min	30-60 minutes
Intensity	RHR+20, RPE-13	60-80% of HRmax
Activity	R.O.M. exercise, treadmill (walking, walking-jogging), biking, calisthenics, arm ergometer, weight training	Walking, jogging, biking, calisthenics, swimming, weight training, endurance sports.

* R.O.M. - Range of Motion

* HRmax - Maximal Heart Rate

Table-4. Contraindications for exercises in cardiac rehabilitation[2,15]

1. Resting systolic BP $\geq$ 220 mmHg or diastolic BP $\geq$ 110 mmHg
2. Resting ST segment depression or elevation > 2mm
3. Uncontrolled diabetes mellitus
4. Orthostatic BP drop of > 20 mm Hg with symptoms
5. Unstable angina
6. Acute systemic illness/fever
7. Uncontrolled atrial/ventricular dysrhythmia
8. Uncontrolled sinus tachycardia > 120 bpm
9. Uncompensated congestive heart failure
10. Active pericarditis or myocarditis
11. 3 degree AV block without pacemaker
12. Moderate to severe aortic stenosis.
13. Recent embolism
14. Thrombophlebitis
15. Orthopedic problem that would prohibit exercise
16. Severe other metabolic condition likes acute thyroiditis, hypokalemia, hyperkalemia, hypovolemia.

Conclusion

Cardiac rehabilitation is an essential treatment program along with medicines for the patients suffering from cardiac diseases. It helps both in prevention and reduces the post MI complications. It should begin as soon as the patient is stable in hospital and continued as a long term rehabilitation program for complete recovery. These programs include education on heart healthy living, exercise training life style modification according to individual, counseling to reduce stress and help you return to an active life.

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Commentary

The Selfie Syndrome – A brief commentary

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Introduction

Selfie, by definition, according to the Oxford Dictionary[1] is "a photograph that one has taken of oneself, typically one taken with a smart-phone or webcam and shared via social media". In addition, it is difficult to deny that is a universal phenomenon which is also practiced as a gesture — a gesture that sends, rather indeed is intended to send different messages to different people and audiences in different communities. It is an increasinglypeculiar trend of the millennial generation to have their selfies modified and amplified at social media platforms which are misreading of the sender's original intent, or adding additional gestures to the mix (likes, comments, and remixes).

Emerging Selfie Culture

Selfie is not the only raging phenomenon but the selfie terminology as relevant existing work also finds space in daily usage.The terminology includes words like- pelfie (pet selfie), belfie (butt selfie), felfie (funeral selfie), drelfie(drunk selfie), helfie (hair selfie), shelfie (picture of bookshelf), welfie (work-out selfie), ussie (group selfie), youfie (selfie of another person) and wealth-fie (rich-person selfie). This is coupled with the emergence of selfie points in various parts of the city of Mumbai and other metros that add fuel to the selfie movement.[2]

Selfie as a Disorder – A Hoax

Since we are talking about selfies and the selfie syndrome, the hoax about 'selfitis' being a disorder must be clarified. It is confirmed that the APA did not classify selfitis as a disorder however theselfie syndrome can be attributed to obsessive and compulsive desire to take photos of one-self and posting on social media platforms. The act of taking selfies is linked with various variables and essentially, it is said that selfie-taking behavior is a means to fill the gap of lack of self esteem and lack of intimacy.[3]

The History of a Selfie

Incredulously, the history of selfie is traced back as long as to the 1800s and it is believed that Robert Cornelius, an American native was the first person to have taken a photo of himself as a self portrait.[4] There is a slight uncertainty with regard to the origination of the term selfie which is said to have appeared in 2004. Other resources state that the term was first used in September 2002 to describe a photograph in a forum posting on the website of ABC which is a public broadcaster. This concept of selfies did not fully pick up until the arrival of a startup project called Instagramthat revolutionized how photos are captured on mobile phones and transformed them as a mean of communication that helped people to connect more easily.

"Selfie" was termed as the word of the year, 2013, by Oxford Dictionaries – after its first known use was revealed to be by an Australian. The year 2013 was eventually dubbed as, "the year of the selfie". The year (2013) saw a recorded frequency of use of 'selfie' to have increased by 17,000 per cent.[5]

Why People Engaging in Selfie-Taking Behaviour

Selfies are the new means of self-expression and self-representation. By posting selfies, people can keep themselves in other minds. In addition, like all photographs that are posted online, selfies are used to convey a particular impression of oneself. Selfies frequently trigger perceptions of self-

indulgence or attention-seeking social dependence that raises the damned-if-you-do and damned-if-you-don't spectre of either narcissism or very low self-esteem. For marginalized users, who are suffering in a relatively severe living environment, selfies are not a shallow way to show narcissism, fashion, and self-promotion and seek attention; selfies, rather, empower the users to exercise free speech, practice self-reflection, express spiritual purity, improve literacy skills, and form strong interpersonal connections. There are other schools of thought that explain the selfie-taking behavior-one of these schools blamesnarcissim for forcing people into taking selfies while the other one praises people who take selfies as self-confident.[6-7]

However, there is no one correct and only explanation of selfie taking behaviour. Cultural factors, differences in socio-demographic characteristics and contextual background play an important role to determine behaviour and meaning of selfie taking. Selfies are also linked with variables like race, gender, colour, position, authenticity and disempowerment.[8]

Selfie and Psychopathology

It is common to encounter discourses of pathology when discussing and working on the topic of selfies. There is a rapid rate at which articles appear linking taking selfies to harmful mental states such as narcissism[9], body dysmorphia[10] or even psychosis.[11] Several research explanations have also delineated on links between selfie and other psychopathological facets like psychopathy, self-objectification and Machiavellianism. There are further links with variables like lack of self esteem, self validation, isolation, concept of FOMO (Fear of Missing Out) and being self absorbed and vacuous.[11]

Studies have accounted for various reasons that people have quoted, saying that they get satisfaction after posting selfies, while some feel insecure after taking selfies (which is indicative of narcissim), other also share having had a negative experience with posting selfies (which is indicative of the objectification and narcissism. feel like taking selfies might become an addiction.Selfies have even been blamed for harm to others, such as accidents caused by a preoccupation with the camera over one's surroundings.[9] Selfies need to be considered as a genre to be able to understand the meanings and pathological explanations behind them. Selfies, in the most stereotypical sense are understood as younge girls taking selfies with 'pouted' faces. When people pose for political selfies, joke selfies, sports-related selfies, fan-related selfies, illness-related selfies, soldier selfies, crime-related selfies, selfies at funerals, or selfies at places like museums, a more accurate language is required than that afforded by 19th-century psychoanalysis to explain about what people believe themselves to be doing and what response they hope to elicit. Till date there has not been a single peer-reviewed piece of scientific literature that convincingly demonstrates that selfie production and mental illness are correlated.[12]

Consequently, there are sociological explanations and other research findings that talk to defy the link between selfie and psychopathology. These findings instead talk about selfie taking as a normal beaviour that people engage in. A recent Ohio State study evaluated men and selfies in terms of the "dark triad" of narcissism, psychopathology, and Machiavellianism, a subclinical group of personality traits notable throughout all sectors of society, deemed within a normal range of functioning and not cause for alarm.[13]Another study, a Pew Report on 'teen photo sharing' claimed to find results that teens are storytellers and mentioned the that they need to learn to practice something called as "selfie control."[14]

Authors argue that a charge of narcissism functions more as an accusation than diagnosis. After explaining that accusing someone of narcissism because they take or distribute selfies "reflects a poor understanding of narcissism itself," she explains the real reason for the charge: It acts as shorthand to chastise those whose photographic self-depiction is perceived as self-absorbed or crass. Although available information does not support the claim that selfie addiction is a social problem, there is sufficient enough in support of the argument that "damned-if-you-do and damned-if-you-don't" rules of visual display apply more to some social groups than others. There are differences when it comes to gender, colour and age of individuals, with respect to which the selfie phenomenon comes under surveillance. Given these realities, it's worth asking what really is at stake in casting the act of taking and circulating multiple photos of oneself as a

primary pathology of our time.[15] It must be remembered that selfies are to an extent influenced and subject to interpretation of the viewer as well. Aspects of an individual like sexuality, race, class, education, ability, and nationality alter the perception of the spectators' identifications and with the look and modifications of the camera, it is impossible to say what a viewing experience "means" for every individual viewer.[16]

A study done by one of the authors (De Sousa), 252 students of 11th standard, belonging to an urban Mumbai school, were interviewed in a single centric cross-sectional study. Scales used were - attitude towards selfie-taking questionnaire, body image acceptance, and action questionnaire (BIAAQ) and Narcissistic Personality Inventory (NPI). Of the 230 completely filled questionnaires, 54% were males. About 42.6% reported that they regularly clicked selfies of themselves. No gender difference was noticed. On an average, 18.1% girls and 15.2% boys clicked more than 4 selfies a day. The gender difference was statistically not significant (P = 0.5273). Difference in mean BIAAQ between the two genders was noticed to be statistically significant, whereas the NPI scores difference was insignificant.[17]

Injuries and Fatalities Related to Selfies

To an alarming degree, selfie deaths seem to plague India making to around nineteen individuals which account for 40% of all selfie-related deaths. The data gathered from Google News Archive and undisclosed sources on Wikipedia showed 19 people were killed since 2014 in India while taking selfies, accounting for 40% of all selfie-related deaths.A 2014 study found that 2 out of every 100,000 people in Mumbai were selfie-takers. The city ranked 416 among 459 other cities globally for most selfies per capita. The average age of the victims is 21 years old and 75% of them are male. In September 2015, Zachary Crockett at Pricenomics reported that selfies caused more deaths worldwide than shark attacks. In an attempt to get the perfect self portrait, people fear less to engage in the most daring poses and do not mind clicking endless photographs in order to get the 'one' best picture. In several countries there have been safe selfie campaigns to warn its citizens of the dangers of risky selfies. As of February 2016, Priceonomics had recorded more selfie-related deaths in India than any other country. According to the Hindustan Times, no official data on the number of people who died taking selfies exists, but reports show from 2014 up to August 2016, there have been at least 54 deaths in India while taking selfies. October 2016, 53 people died due to taking selfies.[18]

The Need to be Cautious in Selfie Taking

Taking selfies is a growing fad around us and the need to be present and live all the time is omnipresent. We are surrounded by posts of people, what they do, what they eat, what they wear and where they go. Addicted to technology and being selfie-obsessed needs regulation for which several simple steps can be taken and points can be kept in mind. Motivating yourself, regulating the use of technology and social media, spending quality time with family and friends are moderate changes that one can deploy on a day to day basis. In addition to these, efforts can be taken to educate the people around you about the ill effects of over-indulgence in the virtually social space and digital disorders that are a consequent of addiction to technology. Social media effects and selfie taking behaviour has been linked with several personality attributes like self esteem, self confidence and self worth. Parents and teachers can play an important role in making their children and students realize the potential they have, the worth they hold irrespective of the 'likes' they receive and build their self confidence. Adolescents should be encouraged to engage more time outdoors in recreational activities to promote a healthy development. The feelings of loneliness arise in adolescents who spend several hours on social networking sites waiting for someone to communicate with them and brooding over the active lives of others that leave lurking symptoms of depression and anxiety among them. Furthermore, the responsible use of media must also be inculcated in the young generation.[19,20]

Conclusion

Just like internet and video game addiction, selfie is a social phenomenon that may become psychopathological if not controlled in due time. This may even turn into a subtype of smartphone addiction in the long run. It is imperative that psychiatrists and mental health professionals are aware of this

phenomenon which may be a new form of obsessive compulsive behavior bordering on narcissism and obsessive compulsive traits.

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View Point

Parenting Consequences on Children Outcomes

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Introduction

Throughout the twentieth century, psychological theories emphasize on the importance of parents and their effect on the socialization of their children. Behavioral learning theories focused the "blank slate" status of young children, and parents were considered as those responsible to train their children what they must learn. Behavioral learning theories mainly paid attention to the control of learning processes exercised by environmental inputs. On the contrary, psychoanalytic theories during that time draw attention to the importance of early experiences within the family by emphasizing their influence on subsequent inner conflicts, internalization of values and defense mechanisms. Furthermore, cognitive social learning theories put emphasis on children's participation in their own socialization process. Increased emphasis is currently being placed on children's and parents' mutual perceptions and understandings about the influence their reciprocal interactions on one another. While each of these theoretical positions accentuate different aspects of familial influence on children's development, all of them accept the underlying assumption that parents and their child-rearing strategies have a powerful impact on their children's development and on the direction their life may take[1].

Since parents play an important role in the development of children, social scientists have allocated a great deal of research to the quality of parent-child relationships. One branch of this research has involved the study of parenting styles which described in terms of two dimensions namely demandingness and responsiveness. Parenting style referred to the interactive behaviors and child-rearing strategies which have been utilized by parents. It can be thought of as the degree of monitoring practices as well as warmth and responsiveness. Parents express their attitude to their children and convey their beliefs, values and behaviors to them in various degrees thoroughout parenting styles. In addition, many aspects of development and behavior such as morality, psychological functioning and academic achievement are influenced by parenting style.[2]

For many years the best known and most widely used conception of parenting styles was the one articulated by Diana Baumrind[3]. She illustrates two key components in identifying parenting styles: the degree of responsiveness and nurturance in parent-child interaction and the amount of parents' control over their children's behaviors. Her longitu-dinal research resulted in a model with three distinct parenting styles which consisted of authoritative, authoritarian, and permissive parenting. Permissive parenting styles can be separated into permissive-indulgent and permissive-neglectful.

Authoritarian parents are high in demandingness and low in responsiveness. They attempt to shape, control, and appraise the behaviors and attitudes of the child compliant with established and absolute standards. Authoritarianism limits the child's autonomy in order to obtain total obedience from the child. Authoritarian parents restrain the self-will of the child and they do not allow their children to express their feelings and opinions. They indicate little warmth and communication and they apply control and power over the child.

Children with authoritarian parents tend to indicate mental health problems such as depression,

over-dependency, suicidal behaviors as well as lower self-esteem and poor self-concept.[4] Overprotection and critical parenting behaviors as characteristics of authoritarian parenting style have been related with Attention Deficit Hyperactivity Disorder.[5] Gonzalez[6] surveyed 311 undergraduate students to determine the relationships among perceived parenting styles and the mastery and performance goal orientations. The Parental Authority Questionnaire[7] was used to assess authoritative, authoritarian and permissive parenting style. The Goals Inventory[8] was used to examine students' mastery and performance orientations. Results of the study demonstrated that authoritarian parents had less negative effect on the perceptions of males regarding their independence, self-assertiveness as well as academic abilities than on females. Gonzalez mentioned that females may be more susceptible to unfavourable influences of authoritarian parenting than males. Therefore, this parenting style is not bidirectional interaction between the parent and child and the parent is considered as the instigator who completely impacts on the child's behaviors and attitudes but remains impervious by any influence by the child.

Permissive parents are high in demandingness but low in responsiveness. Permissive parents are lax, nontraditional, and lenient; they have few clear expectations for their children's behavior. These parents avoid confrontation, exercise inconsistent discipline and encourage children to express their impulses freely. Parents with a permissive parenting style make few demands for children's responsibility and give them a great deal of freedom to do. Hence, these parents put forth no control over their children, set no appropriate boundaries for them, and exhibit no expectations. These parents may consider themselves as a resource that the children may use when desired but not as a model of suitable conduct. Permissive parenting style produced some negative outcomes such as poor self-regulatory behaviors and substance abuse as well as adolescent's suicidal behaviors.[9-11]

Permissive-neglectful parents are neither demanding nor responsive toward their children.[2] This style of parenting is quite adult-centered because parents respond to their children with little interest. Researchers believe that children whose parents pay negative attention to them are psychologically better than those to be neglected by parents. Negative views of parents towards their children lead to the negative interactions between the parent and child.[12] It has been revealed that adolescents from neglectful homes had lower levels of academic achievement and less family relations, were less mature and socially competent, than those exposed to other parenting styles.[13,14]

Authoritative parents are high in demandingness and high in responsiveness. Authoritative parenting style is defined as one in which parent give priority to the child's needs and supports his/her present qualities, while setting age-appropriate maturity demands for suitable future behavior.[15] They are warm, responsive, involved and set clear standards and expectations for their children. They use supportive rather than punitive disciplinary methods, and they want their children to be assertive as well as socially responsible, self-regulated, and cooperative. Verbal give-and-take is encouraged and they share with the child the reasoning behind parental policies. These parents uses reason in order to achieve their parenting goals and do not behave merely on basis of their own desires or their children's desires. Authoritative parenting is related to the most favorable outcomes.

It has been found that authoritative parenting style is related to better social competence, autonomy, academic achievement, adjustment, adaptive coping skills, self-reliance and high self-esteem.[13,14,16] Authoritative parenting style has also been associated with better mental health outcomes such as less severity of Attention Deficit Hyperactivity Disorder symptoms and less psychological and emotional disorders.[5,14] Baumrind[17] reported in her longitudinal study that adolescents with authoritative parents were the most competent and least maladjusted when compared to the adolescents with authoritarian and permissive parents. Adolescents who have authoritative parents tend to display more independent, self-assured and creative behaviors.[18] They also tend to do well in school and have good relationships with their peers and adults. Authoritative parents develop character-istics such as optimism and self-regulation in their adolescents that in turn have positive effects on a wide range of behaviors.[19,20]

For several reasons authoritative parenting seems to be better for children. Authoritative

parenting attains a balance between allowing enough autonomy for children to expand their capacities and at the same time requiring them to exercise their increased autonomy in a responsible way.

Parenting Styles and Academic Achievement

Many research studies have found a positive relationship between authoritative parenting styles and student academic achievement.[21-23] Baumrind[21] indicated that preschool children who have authoritative parents were more independent, prosocial, active, and achievement-oriented than children with non- authoritative parents. In contrast, permissive parents tend to foster low level of self-reliance, self-control, competence and low levels of academic achievement. Steinberg et al[23] indicated that authoritative parents developed higher levelsof authoritative parenting by providing their children with warmth, autonomy,and high maturity demands had children with higher achievement levels.

There are several reason that indicate why authoritative parenting might be related to positive child outcomes[24]. Firstly, authoritative parents give a high level of emotional security that provides their children with a sense of comfort and indepen-dence and assists them to succeed in school. Secondly, the children with authoritative parents receive the explanations for their parent's behaviors. Explanations provide children with a sense of awareness and understanding of their parents' values, and goals. The transmission of these goals and values equips these students with the tools needed to perform well in school. Thirdly, authoritative parents hold bidirectional communication with their children.

Parenting Styles and Locus of Control

From the standpoint of the parent-child relationship, young children tend to foster a sense of internal locus of control when their parents are responsive. Responsive parents develop the secure attachment in their own children which in turn was related to the children's being willing to explore new situations[25]. In other words, parents are important in developing locus of control in their children. Research revealed that adolescents from authoritative mothers tend to exhibit behaviors associated with internal locus of control orientation. They ascertained positive relationships between maternal authoritative parenting style and internal locus of control. Conversely, maternal permissive and authoritarian parenting styles have been related to external locus of control. In addition, paternal parenting styles were moderated by locus of control.[26,27]

Another study examined the relationship between perceived parental nurturance and self-reports of locus of control. They utilized the Cornell Parent Behavior Instrument[28] and Nowicki-Strickland Locus of Control Scale.[29] They found that nurturance parents foster internal locus of control in their children. Children who developed internal locus of control perceived both their fathers and mothers as using reasonable discipline. In addition, fathers were viewed as strict but also were seen as setting predictable standards. On the other hand, mothers rated high in nurturing, encouraging and giving of autonomy. The children with an external locus of control perceived both mothers and fathers as rejecting and using physical punishment. Mothers were viewed as being overprotective, whereas fathers were seen as indulgent.[30]

Rotter[31] also believed that the consistency of parent's discipline is significant antecedent of a child's locus of control orientation. Macdonald's[32] study on the relationship between perceived parenting and locus of control amongst undergraduate students showed significant results. Greater internal locus of control was significantly related to high paternal and maternal nurturance, low maternal protectiveness and high maternal predictability. Mother's predictability of standards was associated with internality among males, while affective punishment by mother was significantly related to achievement pressure.

Nowicki and Segal[33] conducted the investigation regarding students' perceptions of parental nurturance, perceived parental locus of control and self-report of locus of control orientation. Locus of control and parental nurturance were assessed by the Nowicki-Strickland Personal Reaction Survey[34] and the Parent-Child Interaction Rating Scale[35] respectively. Their findings are consistent with previous research[32,36] which showed that parental acceptance and nurturance are related to internal locus of control.

Parenting Styles and Self-Efficacy

It has been revealed that experiences in

childhood are prominent, because during this time beliefs about self, others and the world are being formed. For instance, successful mastery experiences strengthen the development of self-efficacy beliefs, while failures weaken such development. This is especially important when successes or failures happen before a sense of efficacy is strongly established.[37] Bandura[37] put emphasis on the important role of parents in the development of self-efficacy, because parents are considered as children's first and the most influential social models. Concisely, parents play a fundamental role in the development of their children's self-efficacy beliefs. Therefore, it is necessary to look at particular patterns of parent-child communications that may reinforce or undermine the development of self-efficacy beliefs.[38]

The findings suggest that authoritative child-rearing, may lay the groundwork for a strong and lasting sense of personal efficacy, by providing opportunities for mastery experiences, reinforcing a sense of competency, offering emotional support and guidance, as well as modeling constructive styles of coping.[39] Ingolsby et al[40] found the relationships between perceived parenting styles, self-efficacy and achievement orientation. Participants consisted of 185 adolescents from Ecuador and 245 adolescents from Chile (mean age = 15.15; SD = 1.08). They reported that mothers' and fathers' monitoring behaviors and positive induction predicted higher levels of self-efficacy and achievement orientation, whereas parental punitiveness and permissiveness envisaged lower levels of self-efficacy and achievement orientation.

Flouri[41]used longitudinal data to examine the role of mother's parenting attitudes in children's psychological well-being which included self-efficacy, psychological functioning and distress, as well as life satisfaction. Results indicated that maternal child-rearing attitudes were related to later psychological outcomes in daughters but not in sons. In other words mother's non-authoritarian child-rearing attitudes had a protective effect against later psychological distress and low self-efficacy in daughters. Strage[42] explored the effects of family context variable on self-regulating amongst college students. Participants included 465 undergraduate students at a metropolitan university in the United States. The sample consisted of similar proportion of females (55%) and males (45%). The findings revealed that students with authoritative parents indicated higher levels of self-confidence and perceived they were in control of their academic lives. In contrast those with authoritarian parents had more difficulty in completing their assignments and they perceived themselves as incapable of controling their academic lives.

Conclusion

In conclusion, the research reviewed indicates that parents have a significant influence on children outcomes.Parents who are approving and responsive tend to build internal locus of control , high self-efficacy and encourage high level of academic achievement in their children, whereas disapproving, unresponsive and uninterested parents may foster external locus of control and break down self-efficacy levels and decrease school achievement in their children.

However, in some Asian country, authoritarian parenting style was positively related to child outcomes. Therefore, it supports previous findings[23,43-45] regarding the influence of culture on parent-child rearing strategies.

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Drug Review

Buprenorphine Implant: A new option for Opioid Dependence

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Introduction

Buprenorphine sublingual formulation has been used successfully as a harm reduction technique in the long term maintenance of opioid dependence.[1] However, there is the constant threat of illicit misuse, abuse and diversion of sublingual buprenorphine. Secondly adherence is poor with sublingual formulations leading to frequent relapse. Keeping these shortcomings in mind, long acting buprenorphine preparations were introduced to improve adherence and remission rates in opioid addicts. Buprenorphine implant has been approved in May 2016 by US FDA for long term maintenance therapy in opioid dependence patients.[2]

Mechanism of action of buprenorphine in opioid dependence

Buprenorphine is a partial agonist at mu opioid receptor. It has antagonist property at delta and kappa opioid receptors. Due to its partial agonistic property, it suppresses the withdrawal symptoms and craving in opioid dependent patients. Secondly it does not produce euphoria on administration like other opioids and also prevents binding of full opioid agonists (e.g. morphine, oxycodone, heroin, methadone etc.). Thus the patient does not experience the usual high and is free of craving and withdrawal. Also if the patients take additional opioids inspite of being on buprenorphine they will no longer experience the euphoric effect and are thus discouraged from using full opioid agonists. Another unique property of buprenorphine is the "ceiling effect" due to its partial agonistic activity. As a result, higher than prescribed doses of buprenorphine or overdose does not result in the desired "rush" or fatal respiratory depression. The chemical formula of buprenorphine is $C_{29}H_{41}NO_4$ and the molecular weight is 504.10. The chemical structure of buprenorphine is as follows:[3,4]

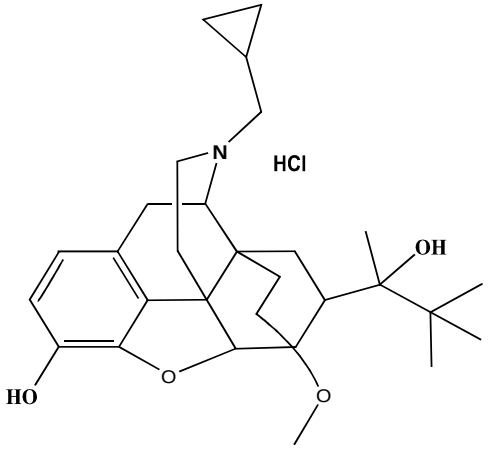

Figure 1: Chemical structure of buprenorphine

Pharmacokinetic and pharmacodynamic properties

Buprenorphine is nearly 96% protein bound, primarily to alpha and beta globulin. Buprenorphine undergoes N-dealkylation primarily through cytochrome P450 (CYP) 3A4 to form the major metabolite, norbuprenorphine. The latter further undergoes glucoronidation before been excreted. Most of the dose of burprenorphine is eliminated through faeces and about 10-30% is excreted in urine. The mean elimination half-life of buprenorphine is 24-48 hours.[3,4]

On successful insertion of buprenorphine implant, it produces blood buprenorphine levels comparable to daily doses of 8 mg sublingual tablets

of buprenorphine. Buprenorphine implant produces a steady state plasma concentration by 4 weeks of around 0.5-1ng/ml.[4]

Buprenorphine produces a faster onset of action as compared to a full opioid agonist. Although the effect of buprenorphine is dose-dependent, after a certain dose it no longer produces any further effect. This is known as the "ceiling effect" due to its partial agonistic property.[3,4]

Description of the Buprenorphine implant

The buprenorphine implant is a white rod shaped flexible ethylene vinyl acetate (EVA) implant which contains 74.2 mg of buprenorphine. This is equivalent to 80 mg of buprenorphine hydrochloride. The length of the implant is 26 mm and diameter is 2.5 mm. Four such implants need to be inserted sub-dermally and provide the drug at a steady rate for six months.[4]

Indication of use

Buprenorphine implant is recommended as a maintenance treatment for opioid dependent patients who have achieved a period of at least three months free from illicit drug use and are stable on low to moderate doses of sublingual buprenorphine. Buprenorphine implant is advised as a part of program consisting of monthly counselling sessions and psychosocial support.[4]

Patient selection for buprenorphine implant

Buprenorphine implant should only be advised to those patients who have achieved clinical stability for at least 3 months on 8 mg or lesser doses of transmucosal buprenorphine. Secondly the patient should not have been prescribed any supplemental doses of buprenorphine. Lastly the patient should not be tapered down to a lower dose of buprenorphine to be able to use buprenorphine implant. Certain factors like good social support, desire to participate in regular follow-ups and therapy sessions, holding a job, no desire to use illicit drugs should be considered while determining suitability for buprenorphine implant.[4]

Method of insertion

Four buprenorphine implants should be implanted sub-dermally on the inner aspect of the upper arm of the non-dominant arm. The insertion site should be 8-10 cm from the medial epicondyle and the implants should be positioned in a close fan shaped pattern with 4-6 mm distance between each implant and the fan should open towards the shoulder. An incision of around 5 mm should be made on the insertion site. The buprenorphine implant comes with an applicator which can be used to insert the implant below the skin. At the end of the sixth month the implant needs to be removed. First the position of the implants need to be confirmed by palpation and then with an incision along the length of the implant, it should be removed using a forceps.[4]

Clinical evidence for use of Buprenorphine implant

Several open-label and randomized controlled trials have been undertaken to assess the efficacy of buprenorphine implant in opioid dependence. Open-label trial by White et al[5] revealed that buprenorphine implant provided continuous steady-state levels of buprenorphine till 6 months at the time of their removal. Also the withdrawal symptoms and craving were low in the participants and 59% of the urine samples were negative for opioid in the six months of the study period.

A randomized, placebo-controlled, 6-month trial conducted at 18 sites in the United States consisting of 163 participants revealed that the buprenorphine implant group had significantly more urine samples negative for illicit opioids, lesser withdrawal and craving as compared to the placebo implant group.[6] Another similar randomized controlled trial with 287 participants comparing buprenorphine implant with placebo implants and sublingual buprenorphine/naloxone tablets also revealed that the former was a better option compared to a placebo and was non-inferior to sublingual buprenorphine/naloxone tablets.[7] A recent, non-inferiority trial compared sublingual buprenorphine with placebo implants versus buprenorphine implants with sublingual placebo in 177 participants showed no difference between groups in the proportion of patients who responded to treatment over a six month period (87.6% and 96.4%, respectively).[8]

Adverse effects

Safety profile was evaluated in nearly 3000 patients and nearly 10% of the subjects reported implant site related adverse events like pain, swelling,

itching etc. Non-implant related adverse events were headache, nausea, vomiting, pain abdomen, constipation, toothache, oropharyngeal pain and depression among others. The only contraindication to buprenorphine implant is hypersensitivity to buprenorphine or the other constituents of the implant (e.g. EVA).[3-7]

Warning and precautions

Nerve damage and implant migration leading to fatal consequences like embolism have been reported in rare cases during implant insertion. Other complications include implant local migration, protrusion or expulsion. Diversion and misuse of buprenorphine in the implant has also been reported and therefore all patients should be monitored. Concomitant use of benzodiazepines, opioid analgesics, anaesthetics, phenothiazines or other central nervous system depressant drugs like alcohol increase the risk of respiratory and central nervous system depression. Therefore dose reduction should be considered in situations requiring concomitant use. Other risks include rare instances of hepatic dysfunction, orthostatic dysfunction, elevation of cerebrospinal fluid pressure, intracholedochal pressure, impairment of ability to drive and operate machinery etc. Buprenorphine has the capacity to precipitate withdrawal in patients dependant on full opioid agonists. Therefore, buprenorphine implant should only be started in patients stable on transmucosal buprenorphine. Similarly, it can precipitate neonatal opioid withdrawal syndrome in newborns of mother maintained on buprenorphine implant. Like in all patients on opioids, buprenorphine implant too can precipitate adrenal insufficiency. Early diagnosis and prompt replacement with corticosteroids leads to recovery of adrenal function.[3,4]

Drug interactions

Since buprenorphine is primarily metabolised by CYP 3A4, potential drug interactions may occur with concomitant use of other drugs which affect CYP 3A4. CYP3A4 inhibitors like azole antifungals, macrolide antibiotics, HIV protease inhibitors etc increase the blood levels of buprenorphine and therefore patients should be monitored for signs of overmedication. Similarly CYP3A4 inducers like efavirenz, nevirapine, etravirine etc may reduce blood buprenorphine concentrations and precipitate withdrawal symptoms. Concomitant use of buprenorphine implant and serotonergic drugs (antidepressants, triptans, monoamine oxidase inhibitors, linezolid, intravenous methylene blue etc) can lead to serotonin syndrome. Therefore these drugs should be co-administered with caution.[3,4]

Drug use in special population

There is a dearth of data on the use of buprenorphine implant in pregnant females. Buprenorphine is excreted in breast milk and therefore can cause drowsiness and respiratory problems in the breast-fed infants. There are so far no studies of buprenorphine implant use in pediatric and geriatric population. Similarly no data regarding use of this implant in hepatic and renal impairment is available. Therefore use of this implant in these special populations should be undertaken with caution.[4]

Conclusion and future direction

Buprenorphine transmucosal preparations revolutionised the management of opioid dependence by enabling the patients to get treated at an outpatient setting as compared to the institutional settings required for methadone replacement regime. Another major obstacle to abstinence is frequent relapse due to poor compliance. This too has been taken care of by 6 month implant formulation. Thus, buprenorphine implant seems to be a win-win situation for patients struggling with opioid dependence. However, the real world experience of buprenorphine implant is lacking. The use of buprnorphine implant as a successful option for maintenance therapy in opioid dependence needs further research.

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Forensic Psychiatry

Psychosocial Aspects of Child Sexual Abuse: A Brief Overview in Indian Perspective

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Introduction

Child abuse occurs in many forms like physical, emotional, sexual, neglect, exploitation etc. Child Sexual abuse is engaging a child in any sexual activity that he/she does not understand or cannot give informed consent for or is not physically, mentally or emotionally prepared for. Child Sexual Abuse (CSA) is widespread, universal and familiar phenomenon. It is a violation of basic human rights of a child and is a shocking, painful and traumatic characteristic of modern world. It has become a very common incident when the innocent, defenseless and helpless child goes through physical or emotional ordeal. It may occur in homes, schools, orphanages, residential care facilities, on the streets, in the workplace, in prisons and in places of detention. Such violence can affect the normal development of a child impairing and their mental, physical and social well being. In extreme cases abuse of a child can result in death. The World Health Organization (WHO) defines CSA as "the involvement of a child in sexual activity that he or she does not fully comprehend and is unable to give informed consent to, or for which the child is not developmentally prepared, or else that violate the laws or social taboos of society".[1] The term CSA includes a range of activities like "intercourse, attempted intercourse, oral-genital contact, fondling of genitals directly or through clothing, exhibitionism or exposing children to adult sexual activity or pornography, and the use of the child for prostitution or pornography.[2] A government appointed committee found that the government's child protection schemes have clearly failed to achieve their objectives. A statement released by LG Arsenault, UNICEF representatives to India states, "It is alarming that too many of these cases are children. One in three rape victims is a child. More than 7,200 children including infants are raped every year; Experts believe that many more cases go unreported. Given the stigma attached to rapes, especially when it comes to children, this is most likely only the tip of the iceberg.[3]

Mental and Behaviour Problems

Reviews studies that have tried to empirically confirm the effects of child sexual abuse are cited in the clinical literature. Effects seen among victim population are fear, anxiety, depression, anger and hostility, aggression, and sexually inappropriate behavior. Frequently reported long-term effects include depression and self-destructive behavior, anxiety, feelings of isolation and stigma, poor self-esteem, difficulty in trusting others, a tendency toward re-victimization, substance abuse, and sexual maladjustment.[4] The existing literature explains that child sexual abuse is an important problem with serious long-term sequel; but the specific effects of sexual abuse, independent of force, threat of force, or such family variables as parental psycho-pathology, are still to be clarified. Adult women with a history of childhood sexual abuse show greater evidence of sexual disturbance or dysfunction, homosexual experiences in adolescence or adult-

hood, depression, and are more likely than non-abused women to be re-victimized. Anxiety, fear, and suicidal ideas and behavior have also been associated with a history of childhood sexual abuse but force and threat of force may be a necessary concomitant. As yet, there is insufficient evidence to confirm a relation between a history of childhood sexual abuse and a post-sexual abuse syndrome and multiple or borderline personality disorder. Male victims of child sexual abuse show disturbed adult sexual functioning. The relation between age of onset of abuse and outcome is still equivocal. Greater long-term harm is associated with abuse involving a father or stepfather and abuse involving penetration. Longer duration is associated with greater impact, and the use of force or threat of force is associated with greater harm.[5]

Indian Perspectives

Now a days Child sexual abuse has became a burning social issue of this country. The frequency of occurrence of such incidents has increased rapidly. A total of 33,098 cases of sexual abuse in children reported in the nation during the year 2011 when compared to 26,694 reported in 2010 which increased by 24%. A total of 7,112 cases of child rape were reported during 2011 as equated to 5,484 in 2010 which increased by 29.7%. India is the home to 19% of the world's children. As per the 2002 census, about 440 million individuals (constitute 42% of total population) in this country were below 18 years of age. It has world's largest numbers of CSA cases.[6] In every 155 minute a child, less than 16 years and in every 13 hours child under 10 are raped.[7] A survey by United Nations International Children Education Fund (UNICEF) on demographic and health was conducted in India from 2005 to 2013, which reported that 10% of Indian girls might have experienced sexual violence when they were 10–14 years of age and 30% during 15–19 years of age. Overall, nearly 42% of Indian girls have gone through the trauma of sexual violence before their teenage.[8] Save the Children, the international organization, and Tulir–Center for Healing and Prevention of Child Sex Abuse, an Indian NGO, conducted a study in 2005 among 2,211 school going children in Chennai. About 48% and 39% of the boys and girls, respectively, reported as being sexually abused, while more than one-tenth (15%) of the participants stated as having faced severe forms of sexual abuse.[9]

(A) Vulnerability: In most (95%) of the cases, the perpetrators is known to the child (relatives, neighbors, step parents, highly trusted people). Physical disabilities like (deafness, blindness) mental retardation children belonging to the lower socio-economic status, the absence of one or both biological parents, marital conflicts and/or parental substance abuse increases the vulnerability. Children under the influence of alcohol/drugs are more susceptible. Customs such as a child marriages, Devdasi system and Ngozi makes to be victims of CSA. Lesbian, gay, bisexual, transgender (LGBT) are at a higher risk to CSA.[9,10,11,12]

(B) Legal Aspects: Some legal provisions have been mentioned in Indian Penal Code (IPC), but these are not sufficient to control child sexual abuse. The Section 375 defines rape. Section 376 of the IPC provides for the punishment of rape which shall not be less than seven years but which may extend to ten years, unless the man raped his own wife and is not under twelve years of age in which case, he shall be punished with imprisonment for a term which may extend to two years or with fine or both. When the girl is less than 12 years or where the rapist is a person in authority (in a hospital, children's home, a police station etc.) the punishment is greater. The other IPC provisions that are invoked is relating to unnatural practices is section 377. This is generally invoked when male children are sexually abused. Although forcible sex with a boy is an act of rape, the rape law of the country under IPC does not cover it. Outraging the Modesty of a woman or a girl is dealt with in section 354 or insulting the modesty of woman is in section 509. Obscenity and pornography are dealt under the Young Persons (Harmful Publications) act, 1956. A young person means a person under the age of 20 years. It is an offence to sell, let, hire, distribute or publicly exhibit harmful publications. Under section 67 of the Information Technology Act, 2000, publication and transmission of pornography through the internet is an offence. The Juvenile Justice Act 2000 and its amendment Act 2006 across the Country has made to serve as the baseline for developing CSA management information system. The protection of Children from Sexual Offence Act was passed in 2012. The Act defines a child as any person below

the age of 18 years and provides protection to all children under the age of 18 years from the offence of sexual assault, sexual harassment and pornography.[13] This is the first time that an act has listed aspects of touch as well as non-touch behaviour (e.g. photographing a child in an obscene manner) under the ambit of sexual offence. The Act incorporates child friendly procedure for reporting, recording of evidence, investigation and trial of offence.

(C) Organisations : There are some national level organizations working having the issues of child sexual abuse: In Delhi (Butterflies, Pratidhi, RAHI), Mumbai (Aangan, Aarambh, Apnalaya, Arpan, Balprafulata, The Foundation) Pune (Muskaan), Banglore (APSA, Enfold), Chennai (Tulir), Goa (ARZ and Child Rights in Goa), Mangalore (Project Angel). In November 2014, Aarambh, the first online resource portal in India was launched in Mumbai.

(D) Awareness, Advocacy, Public Education and Monitoring: It is an acknowledged fact that awareness about child protection issues is almost negligible in the country. Even the understanding of the terms 'Child Rights' and 'Child Protection' is low. The role of advocacy, public education, communication is still required, needful and essential for awareness as well as changing mindsets at all levels. There are various schemes/programs being implemented by Government of India and State Governments on child protection. However, the awareness about such programs is generally poor and therefore people are not able to avail services under those programs. People are not even aware about the competent authorities in their States/ districts responsible for providing care and protection to children in difficult circumstances.

Management: The management of CSA can be grouped mainly into three forms; proper assessment as well as medical exam, treatment and rehabilitation.

(a) **Proper assessment as well as medical examination:** The WHO Guidelines on the clinical management of rape offer concrete recommendations for preparing a child for the medical exam.[14] These are (i) There should be a support person or trained health worker whom the child trusts in the examination hall (ii) Encourage the child to ask questions about anything he or she is concerned about or does not understand at any time during the examination. (iii) It is possible that the child can not relax because he or she has pain. If this is a possibility, give Paracetamol or other simple painkiller and wait for them to take effect. (iv) Child should never be forced to complete an examination. Restraint and force are often part of sexual abuse. That will increase the child fear and anxiety and worsen the psychological impact of the abuse. (v) It is useful to have a doll, toys, coloring books and other kinds of materials at hand to demonstrate procedures and positions. Professionals or health staff can use these materials to explain the child, how the exam will be done and to show the child the equipment and supplies, such as gloves, swabs, etc.

(b) **Treatment/ Intervention:** over the past several years, one particular intervention Trauma-Focused Cognitive Behavioural Therapy (TF-CBT), has been rigorously tested as a treatment for abused children and is currently recognized as one of the most effective interventions for children with a high level of psychological symptoms related to trauma and abuse. Components of the TF-CBT model are (i) Knowledge and skills for teaching child survivors skills to deal with difficult feelings and cope with stress. Children can then use these skills for the rest of their lives to manage stressful experiences and situations (ii) Involving the parent or caregiver in the treatment process (iii) encouraging the child to talk directly about the sexual abuse by developing a trauma narrative—if appropriate. (iv) Knowledge and skills for community-based interventions that create a stronger protective environment and support children's psychosocial wellbeing by ensuring positive participation in social and community life.[15]

(c) Rehabilitation and Social Re-integration: The rehabilitation and social reintegration of a child/ juvenile should be carried at the earliest based on individual social history. The focus should be on: Reintegrating the child in his/her biological family through counseling and other supportive services, Adoption placement, Foster care where necessary, Sponsorship support where required, Transferring the juvenile/child to an

After-care Organization. The provisions for promoting non-institutional services for the rehabilitation and social reintegration of children/ juveniles in institutions should be as per the provisions of the Central Model Rules/State Rules under Juvenile Justice Act 2000.

Limitations: The issues of CSA are still a taboo in India. In this country, majority of the people remain numb about this issue. This silence is due to the fear of indignity, denial from the community, social stigma, not being able to trust government bodies, and gap in communication between parents and children about this issue.[16] The major limitation of minimizing CSA and obstacles in rehabilitation are:

i. Majority of the healthcare professionals do not have the abilities and are not trained to examine and manage cases of CSA.
ii. Dearth of good monitoring of various juvenile residential institutes.
iii. There is no punishment for institute that does not follow the laws.
iv. There are many institutions working on child sexual abuse but they fear also. They will lose their dignity /black listed if incorrect information is disclosed.
v. A number of factors confound the identification a CSA victims. Many instances offenders do not penetrate the child and medical investigation does not provide any evidence of rape.
vi. Restrictive interpretation of penetration in the explanation to section 375 is an obstacle to cases of CSA. Explanation to section does not treat forced sexual intercourse by a husband against the wife (the above 15 years) as an offence.
vii. The execution of law and its initiatives are still challenge.
viii. There is lack of funding for programs for child safety.
ix. The ordinary criminal laws related to CSA are totally inadequate to protect the children. These sections do not include the common forms of child sexual abuse nor their impact on the children.

Conclusion

Now we have groundbreaking data on child abuse. It is the time people should wake up for protection of children's rights. Legal provisions are there but there is lack awareness, which has made this problem challenging. The gravity of the situation demands that the issue of child abuse to be placed on national agenda. Despite the much legislation in India on several forms of child abuse, there are still gaps in the legal provisions related to child abuse. It is absolute necessary to alert Government, civil society and citizens to play a more active role in promotion, respect and appreciation of the rights of the child. Acknowledging this on International Day for the rights of the child 19th November is not sufficient. It's needed to continue development of law. Civil society should take responsibility to prevent this universal problem.

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Forensic Psychiatry

Forensic Aspects of People with Dementia

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Introduction

The elderly population of India is estimated to be approximately 100 million and is expected to increase to 323 million people by 2050.[1] The Alzheimer's and Related Disorders Society of India, in 2010, estimated that around 3.7 million people above the age of 60 years suffer from dementia.[2] The most common dementias seen are Alzheimer's disease (AD), vascular dementia, dementia with Lewy bodies and Frontotemporal dementia.[2] People suffering from dementia are at high risk for abuse as well as increased risk of committing unlawful acts due to their cognitive decline.[3] Thus, an increase in dementia would mean an increase of demented people having problems with the legal system – in both civil and criminal courts.[3] This calls for an urgent need to amend National and State policies to address the issues related to dementias.[2] Educating the general population including the judicial system will be an essential step to prevent the mistreatment and misjudgment demented people by the society.[3] In this article we will discuss the elder abuse in dementia and the vulnerability of dementia patients to commit acts which are considered illegal.

Abuse of elderly with Dementia

Elder abuse is defined by the American Medical Association as an act or omission which results in harm or threatened harm to the health or welfare of an elderly person.[4] The elderly with dementia carries a higher risk of abuse due to the intense burden it puts on the caregiver for the physical, psychological and financial needs of the patient.[5] The disabilities and illness associated with old age further contribute to the caregiver burden.[6] People with dementia have a higher rate of self-neglect as well as neglect by the caregivers,[7,8] financial exploitation,[9] and mutual abuse, both verbal and physical.[10] Behavioral disturbances such as aggression and agitation seen in dementia patients may also promote elder abuse.[10]

Various forms of Elder Abuse[14]

Physical Abuse that includes but is not limited to slapping, shoving, beating, restraining, pinching, burning.
Psychological Abuse that may involve intimidation, threat, "silent treatment", manipulation, verbal abuse.
Sexual Abuse i.e. any unwanted sexual behavior such as inappropriate touching, exhibiting nudity, rape.
Financial Abuse such as fraud, forgery.
Neglect i.e. failure to provide or actively with-hold materials or assistance with activities of daily life.

Female patients (60%) are more likely to get abused in comparison to male (30%) patients[1] and the risk is enhanced if the female is widowed.[11] Also, a lower education level,[11] living alone,[11] being financially dependent,[11] poor health of caregiver,[12] and lack of social support[12] are risk factors for abuse. Dementia people with their cognition relatively intact during the initial phase of their illness are more likely to get abused physically.[3] Neglect is more commonly seen in dementia persons with significantly decreased cognitive functioning.[13] In most cases, adult children (83.6%), daughter-in-law (30.9%), spouses (9.1%) and son-in-law (7.3%) have been shown to be primary abusers.[12] Since elderly people are dependent on their caregiver, they are often reluctant to report the abuse.[15] Also, many symptoms of dementia such as poor memory, paranoia, delusions, hallucinations, and unpredictable behavior[16,] make it difficult to believe the patient's

side of story.[17] Elderly women with dementia are also more likely to get sexually abused as they are less likely to report or be believed.[18]

A Turkish study was done retrospectively to find the demographic and clinical characteristics of AD patients that come for forensic evaluation. The study found that most AD patients were referred for evaluation for decision-making capacity (83.3%) while only 17.7% were referred for physical injury. The physical injury mostly consisted of home accidents of accidental nature, mainly falls and burns. No case was referred for criminal responsibility. In wake of increasing number of cases presented to court for financial aspects of decision making such as wills and for guardianship, it is not uncommon to see AD patients being presented for forensic evaluation.[19]

Assessment of elder abuse in dementia population

It is recommended that screening for abuse in the dementia patient population should ideally be done in hospital setting routinely as these patients often seek health services.[20,21] Cases of elder abuse are hard to prove and the perpetrators are often freed due to lack of sufficient evidence for prosecution. This is predominantly because most perpetrators are family or friends on whom patient is dependent for activities of daily life including finances.[22] Educating masses on what constitutes elder abuse, encouraging elders to report elder abuse and devising ways to prevent abuse is urgently needed.[22] For e.g. an Australian banking industry devised an educational tool to educate the banking professionals on the strong relationship between dementia and financial abuse. Use of similar tools may help reduce the financial exploitation in dementia patients.[23] More research studies need to be done to shed light on abuse in dementia patients in India using culturally sensitive instruments.[24]

Evaluation of Elder Abuse[25,26]

History, physical examination and cognitive evaluation.
Evaluate living arrangements and social\supports.
Evaluate financial status
Evaluate emotional stressors
Evaluate interactions and relationship between patients and caregivers

Screening scales used to detect elder abuse[17]

Based on Clinician Assessment	Based on respondent	Based on non-professional Caregivers
Indicators of Abuse Screen	Hwalek-Sengstock Elder Abuse Screening Test Short	Caregiver Abuse Screen
Elder Assessment Instrument	Elder Abuse Suspicion Index	Modified Conflict Tactics Scale
The Brief Abuse Screen for the Elderly	The Conflict Tactics Scale 2 Short	
Minimum Data Set Abuse Screen	Vulnerability to Abuse Screening Scale	

Criminal Behavior in dementia patients

Fronto-temporal dementia (FTD) is a neurodegenerative disorder with pathology in the frontal and temporal lobes.[27] The anomaly in ventromedial prefrontal cortex leads to disturbances in moral reasoning, the anomaly in orbitofrontal cortex leads to compulsive disinhibited behavior and that in right anterior lobe leads to disturbances in emotional empathy.[28] The degeneration of frontal lobe is associated with predominant changes in personality and social functioning such as disinhibition, apathy, and emotional unconcern, early loss of social and personal awareness, hyperorality and impulsive behavior.[29]

A retrospective study using records of 2,397 patients found that the most common dementia conditions associated with "criminal behavior" were behavioral variant frontotemporal dementia (bvFTD) followed by semantic variant primary progressive aphasia, AD and Huntington disease (HD). Out of these dementias, patient with FTD were shown to be most frequently involved in acts considered unlawful while AD patients were least likely to be involved in criminal behavior. The criminal behavior seen in people with dementias that affect frontal and anterior temporal parts of brain comprised of theft, traffic violations, inappropriate sexual advances, trespassing, subordination, urinating at public places and violence towards people and animals. Infact, in FTD patients, criminal behavior may be the presenting feature.[30] Therefore, any crime committed for the first time after the age of 55 years should alert the physician to look for neurodegenerative brain changes.[31]

Evaluation for criminal behavior in dementia

A timely intervention by a neurologist is a must in suspected cases of neurodegenerative disorders.[31] The evaluation should begin with examination of all medical records and neuropsychiatric evaluation.[19] It is recommended that people above 55 years of age reported to police for the first time should undergo neuropsychological tests and neuroimaging to rule out neurodegenerative disorders.[32] Gregory et al., in 2002 conducted a study on FTD patients, AD patients and HC. They found that the frontal variant of FTD patients performed abnormally on all tests of theory of mind (ToM) i.e. first order false belief; second order false belief; faux pas detection; and Reading the Mind in the Eyes but showed no difficulty on general comprehension and memory. AD patients in contrast performed poorly only on second-order belief test that measures working memory. Further, significant negative correlation was found between ToM tests and neurobehavioral disturbances seen in FTD patients.[33] Thus, people with dementia may appear normal during the initial duration of illness.[30, 32] FTD patients may well acknowledge that their actions were wrong but they were not able to control their actions or they may be less concerned about the nature of their actions.[31,34] This is because of the fact that dementias affecting frontal and anterior temporal regions of brain are detrimental fora person's capacity for inhibition and judgment.[30] Patients with FTD also reported to be less concerned about their deficits as compared to AD patients.[35] This does not fit into the M'Naghten rule which implies that any person can plead guilty by reason of insanity if he/she fails to understand the nature of their actions or whether the actions were right or wrong. Thus, a patient with neurodegenerative disorder may be wrongly convicted.[31]

Since it may not be possible to diagnose FTD cases initially, follow-up assessments are required to diagnose it properly.[26] To check lack of empathy or antisocial features, Iowa Scales for Personality Change can be used as it is sensitive to cognitive deficits.[36] The legal system should also be made aware of the possibility of dementia related criminal behavior.[34] Patients that are no danger to the society can be safely discharged to their homes while those who pose some threat may be institutionalized to government hospitals.[31] It may be equally important to screen prisoners who committed crime past their middle age to rule our neurodegenerative disorders.[35]

Conclusion

Abuse in elderly with dementia is underreported in India. This is because of lack of public awareness regarding dementia in elderly and what constitutes abuse, lack of dementia research and reluctance on the part of early dementia patients to report abuse as they are dependent on their caregivers. With advancing dementia, elderly persons are more unlikely to report abuse and less likely to be believed even if they report abuse due to their deteriorating cognitive abilities. On the other hand, it has been increasingly realized that dementia especially bvFTD, smPPA and HD can first came into attention when these patients have committed an unlawful act. Since the elderly population has been estimated to substantially increase in India, it is imperative to conduct more research and help public and law agencies realize the implications of dementia.

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Case Report

Familial Transmission of Mental illness in offspring of Bipolar Affective Disorder

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Introduction

Offspring of patients with psychiatric illness are at an increased risk of developing psychiatric illness. Family studies have primarily focused on the risk of developing the same disorder as the parent suffered from.[1] However, evidence suggests that familial risk might be broader, with children of parents with psychiatric illness also having increased risk for mental disorders other than the disorder diagnosed in the parent.[2] Such nonspecific risks are supported by twin and molecular genetic studies showing that genetic dispositions to mood disorders and schizophrenia overlap.[3] In this case report we present a family in which father was known as cases of bipolar disorder and his two daughters were diagnosed as a cases of schizophrenia and severe depressive disorder with psychotic symptoms respectively.

Case Report

19 year old female came to psychiatry OPD with chief complaints of poor self care, hearing of voices, withdrawn behavior, increase in the appetite, disorganized behavior like smearing of faeces, collecting garbage, inserting matchstick in the nose and ear and sleep disturbances from last 8-9 months. Patient was admitted for proper management. During admission routine investigations and special investigations were done like thyroid profile , Kidney Function Test, Liver Function Test, CT Scan-brain and were found to be within normal limits. Ophthalmology reference was done, fundus was normal. Diagnosis of schizophrenia were made after detailed history and mental status examination (MSE). Patient was initially started on olanzapine but due to poor no response so later was shifted to risperidone and ECTs were done after which patient showed improvement.

Along with patient, her sister was also admitted with complaints of persistent low mood, marked decreased in appetite leading to remarkable weight loss, decreased interaction with family members, marked decrease in psychomotor activity and sleep disturbances from last one year. On MSE, delusion of persecution, reference, ideas of hopelessness, guilt and worthlessness were present. Diagnosis of severe depressive episode with psychotic symptoms was made and ECTs were planned for patient after which she showed improvement.

After few days, their father who is known case of bipolar affected disorder was too admitted with complaints of decreased need for sleep, increased activity, increased talkativness, marked increase in the psychomotor activity, and aggression. Father is known case of bipolar affective disorder. Patient was put on divaloproex sodium and olanzapine. After few days of admission father showed improvement on medication.

Discussion

The above case report shows the risk of transmission of different mental illness in offspring of psychiatric patient. Previous literature shows that mother or father diagnosed with mental illness, such as bipolar disorder, the risk of mental illness in offsprings is about 1 in 104. The heterotypic familial transmission supports findings from molecular genetic analysis suggesting shared genetic factors underlying schizophrenia, bipolar disorder and major

depression.[5,6] However, to what extent the observed parent-offspring association is due to genetic factors vs environmental factors remains open.

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Case Report

A rare case of Firesetting of House and Planned Homicide due to Delusional Jealousy

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Introduction

Delusional jealousy, also known as Othello syndrome or morbid jealousy is a psychological disorder in which a person is preoccupied with the thought that their spouse or sexual partner is being unfaithful without having any real proof[1] along with socially unacceptable or abnormal behavior related to their thoughts.[1] Kraepelin used the term 'sexual jealousy'. Enoch and Trethowan[2] have considered the demonstration of delusion of infidelity in distinguishing psychotic from other types. The name Othello syndrome was first coined in 1954[3] after the lead in Shakespeare's play Othello. Othello murdered his wife, as he believed she was unfaithful. The syndrome is probably inaccurately named, as it seems Othello was deceived rather than deluded about Desdemona's alleged infidelity, but the name has remained in use.[4] Perhaps more appropriately termed morbid or delusional jealousy, the presentation is rare in its pure form and is more commonly associated with personality disorder, chronic mental illness, substance misuse and organic brain lesions.[5]

The most common cited forms of psychopathology in morbid jealousy are delusions and obsessions. It is considered a subtype of delusional disorder. This disorder occurs when a person typically makes repeated accusations that spouse or sexual partner is being unfaithful based on insignificant, minimal or no evidence, often citing seemingly normal or everyday events or material to back up their claims. Delusions of infidelity may occur without other psychotic symptoms. Such delusions are resistant to treatment and also do not change with time. Delusions of jealousy are common with alcohol abuse. They may also occur in some organic states, e.g. the punch-drunk syndrome of boxers following multiple contrecoup contusions and are often associated with impotence. Morbid jealousy arises with the belief that there is a threat to the exclusive possession of one's sexual partner, but this is just as likely to occur from conflicts inside oneself, one's own inability to love or sexual interest directed towards someone else as from changing circumstances in environment or spouse's behavior. Husbands or wives may show sexual jealousy, as may sexual cohabiters and homosexual pairs. Morbid jealousy makes a major contribution to the frequency of wife battering and is one of the commonest motivation for homicide. Delusional jealousy is an important subject for Forensic Psychiatry because of its well known association with violence, especially directed toward spouses. Delusional jealousy has received increasing attention from the psychiatric community[6,7] and the public.[8] The renewed interest is related to a greater appreciation of the linkage between delusional jealousy and subsequent aggression especially violence.[3,6,9]

Case Report

A fifty year old male working as an assistant manager in public sector bank was brought by the police on the orders of State High Court to the psychiatry OPD for his mental state examination. His history revealed that since his marriage in 1993, for more than two decades, he had strong and fixed belief that his wife who worked as an assistant manager in co-operative bank was unfaithful to him and had extra-marital relations with the staff of the bank. As a result, he got her transferred to his place

of work. Here also he continued to believe that his wife had extramarital relations with the manager of the bank which was denied by his wife. He would repeatedly check her mobile phones and would also follow her in the office but never noticed any unusual behavior. He had good relations with the neighbors and also had cordial relations with the staff members of the bank. After a few years he developed a firm belief that his wife and mother-in-law were into the business of prostitution. His increased suspiciousness and firm belief regarding his wife forcing their sixteen year old daughter into prostitution made him wild and aggressive and resulted in his beating up his wife. In 2010, one day he suddenly accused his wife that their son was not out of their wedlock and wanted his son's DNA test to be done for paternity. This caused severe marital discord which lead to their separation. The children were with their mother. He filed a case for divorce in the district court and moved an application for his son's DNA test. As the DNA test got delayed due to cumbersome procedure, it made him more suspicious about his wife's involvement in prevention of the DNA test of their son and his strong belief regarding her involvement with the judge. He then moved the high court for the DNA test. Here also, because of the unusual delay in DNA test, he accused the high court judges of being involved in prostitution with his wife and letters to this effect were written to the judges. He now also believed that immoral CD's were made of his wife with the judges which were hidden in his house. Letters regarding these accusations were also sent to the judges by him and they ultimately referred him to the department of Psychiatry for his mental state evaluation.

In Nov 2012, as he was unable to trace the immoral CD, he planned to set his house on fire which he did on the day of Deepawali. The police inquiry proved it to be an accidental fire and hence no case was registered against him. In 2013, in the month of March, he brought his daughter from his wife's place to stay with him as she had attained 18 years of age. As he had strong belief that his wife was forcing her daughter into prostitution he now planned to kill her. He meticulously planned it. First he developed cordial relations with his daughter and won her confidence over few months. At the time of murder, he first sedated her and then with a kitchen knife cut her left wrist and presented it as suicide. The police, however after investigating the case proved it to be a case of planned homicidal killing. Ultimately he confessed his crime. There was no significant affective component and no disturbances in biological functions. There was no evidence of any other thought disorder, abnormal perceptions or cognitive impairment. He had not been misusing alcohol or drugs and did not smoke. There was no personality or behavioral change. His developmental history was unremarkable. There was no suggestion of any interpersonal or social difficulties that could have contributed to the onset of the above symptom including no indication of marital difficulties. He was quite efficient at his job. Blood test and neuro-imaging were unremarkable and did not explain his psychiatric presentation.

Discussion

This case of fifty year old male suffering from delusional jealousy for last two decades is presented here because of his setting house on fire and planned homicidal killing of his daughter. This was because of complete denial of his illness and refusal of treatment for the same. Individuals who suffer from delusional jealousy frequently harbor varying forms of hostility, especially toward the allegedly unfaithful spouse.[3,6,9] In delusional jealousy, aggression may be minimal as exemplified by mild hostile ideation that is never verbalized and therefore may go unrecognized, or it may be associated with extreme physical violence such as homicide of the spouse or less frequently the homicide of the alleged paramour.[9,10]

Conclusion

This case has been presented because setting house on fire and planned homicidal killing of a daughter by her father is a rare act. Keeping in view that in delusional jealousy, usually it is the spouse who is vulnerable for homicidal act. Treatment, if initiated early by the spouse or any other member of the family in consultation with the psychiatrist, could have prevented setting fire of house and planned homicidal killing of his daughter. Although psychiatrists had given their opinion that he was dangerous to the family and strongly recommended his treatment but the police/judiciary failed to see the gravity of the situation. This case also highlights the need for sensitizing the police and judiciary

regarding such delusional patients.

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Case Report

Temporal lobe injury and its Psychiatric Sequelae

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Introduction

The long-term neuropsychiatric consequences of traumatic brain injury (TBI) are numerous and outstrip their physical counterparts in terms of impact on quality of life and outcomes such as return to work.[1] One of the earliest detailed reports of psychiatric symptoms following traumatic brain injury was the famous case of Phineas Gage, a construction worker who, in 1848, survived an accident in which an iron bar went through his skull, seriously damaging the frontal lobe; following which his personality changed from being a responsible and socially well adapted man to a negligent, childish and profane person and who was unable to take responsibility.[2-3]

McAllister and Ferrell also noted a connection between the development of psychotic features and temporal lobe damage following mild TBI.[4] A study reported that Psychosis secondary to head injury occurs in 4% to 8.9% of individuals. Localization data from different populations and methodologies, including imaging, EEG and lesion location, consistently report abnormalities in the temporal areas following head injury.[5]

The changes in personality following TBI can be classified into two distinct syndromes: first, a pseudo-depressed personality syndrome that is characterized by apathy and blunted affect and, second, a pseudo-psychopathic personality syndrome portraying disinhibition, egocentricity, and sexual in appropriateness as its outstanding features.[6] Brain injury can alter the balance between the potential for impulsive aggression, mediated by temporo – limbic structures such as the amygdala, and the control of this impulse via orbitofrontal mechanisms.[7] It is for this reason that many individuals who exhibit aggression after brain injury are assumed to lack regulatory control over social behaviour, implying an executive deficit.

Most of the literature regarding neuro-psychiatric sequelae of head injury is either non-specific or specific to frontal lobe. Thus, we report this case of psychiatric sequelae following injury to temporal lobe (temporal bone fracture) as temporal lobe injuries are very common and clearly lead to neuropsychiatric sequelae but are not given its due attention. Moreover, management of the behavioural problems following these injuries becomes more complex and involve balanced integration of psychological, behavioural and pharmacological interventions.

Case Report

Ms X, a 16 year old girl unmarried, of low socio-economic status and rural background, received primary education, was referred to Psychiatry outpatient unit by Neurosurgery unit following a history of head injury 15 days back which was associated with ear and nose bleed and loss of consciousness for which the patient remained admitted in surgery ICU. Patient regained consciousness after 4-5 days and was fine for the following 2 days. Gradually, patient's behaviour altered and she started remaining agitated and would try to run from hospital for which she had to be physically restrained at times. She would start crying unprovoked and inconsolably. Although, she remained oriented, her behaviour gradually worsened. Her total sleep time reduced and she remained increasingly irritable, stubborn and would

talk irrelevant at times. On psychiatric evaluation it was observed that the patient was overly talkative and had elevated self esteem. She would appear authoritative and would keep talking about wanting to study further and also kept saying her teacher "Ruba" had asked her to come back though her mother said it all imaginary. She would cry spontaneously and would laugh on trivial matters. Her mood according to the patient was "mann bura rehtahai, ghabrata hai" and her affect was labile and inappropriate. Her speech was sponta-neous, coherent and prosodious but rate was increased, it was mostly relevant and but at times irrelevant during the interview. There was no evidence of any thought or perceptual abnormality other then elevated self esteem in thought content. Patient appeared distracted and had difficulty in sustaining attention, her judgement and insight were impaired. Her appetite was normal and bladder and bowel were normal and regular. There was no alteration in consciousness or acute confusional behaviour, no seizures or high grade fever that was recorded during this period post her injury. Her past history, personal history and family history were non contributory. Pre-morbidly she was very active and smart according to her mother. She used to do all the house hold work and was very respectful to elders in the family. She was well adjusted to both social and personal life.

On general physical examination she was found to be moderately nourished and was conscious and co-operative. Her vitals were stable and there was no pallor, icterus, cyanosis, clubbing, lymphadeno-pathy or oedema. On mental state examination, she was appropriately clad and kempt and looked as per her stated age. She had an unsteady gait and had to walk with support from parents. Her psychomotor activity was increased and eye contact was made but not sustained. Although, she was cooperative during most of the interview but kept getting trying to get up and leave the interview room. There were no abnormal movements, tic or tremor or abnormal posturing, mannerism or stereotypical movements observed. In memory, her immediate recall was intact and she had anterograde and retrograde amnesia. She performed poorly on assessment of her intelligence and fund of knowledge which was possibly due to impaired attention. No active neurosurgical intervention was advised. Patient complained of mild headache and was started on paracetamol 500 mg twice a day along with tablet haloperidol 1.5 mg twice daily initially and increased to 2.5 mg twice daily and tablet lorazepam 1 mg was started for her behavioural problems. Patient was diagnosed as other organic personality and behavioural disorders due to brain disease, damage and dysfunction (F07.8) according to International Classification of Diseases 10th edition (ICD 10).

Serial mental status examination revealed improvement in unsteadiness of gait, average psychomotor activity, and complete improvement in irrelevant talks with reduction in lability of mood and crying spells. Subsequently, her higher mental functions also improved i.e. initial improvement in memory followed by improvement in her concentration. There are still some persistent cognitive deficits but no other affective, psychotic or cognitive symptoms at 2 months of follow up in the patient.

Discussion

This case report aimed to study the neuro-psychological and neurobehavioral proûle of the patient following traumatic temporal lobe injury. Patient presented with significant psychological and behavioural problems post TBI which were consistent with other case reports and studies conducted else where.[8-9] Patient showed increased irritability and anger outbursts following trauma to temporal lobe; a finding which is consistent with other case studies.[7] Studies suggests that TBI make patients particularly susceptible to depressive episodes, delusional disorder, and personality disturbances, in this patient we found that patient had dysphoric and irritable mood with psychomotor agitation.[10-11] Few studies have suggested cognitive impairment in patients of TBI including impaired verbal fluency, however, in our patient this particular domain was not affected.[12] There was moderately severe cognitive impairment in the patient. Patient was oriented and her immediate recall was intact but she had anterograde and retrograde amnesia, also she had difficulty in sustaining concentration. This finding is consistent with the literature published in regard with TBI to temporal lobe.[13-14] Cognitive impairments have been described at prevalence rates of 25-70% post-TBI.[14] A study has also suggested that traumatic stressors may have the

ability to impact gene expression in a vulnerable population leading to psychosis but this patient did not have any familial history of psychotic disorders or any pre-morbid traits suggesting any vulnerability.[15] Interestingly, our patient had behavioural symptoms which mimic symptoms of affective psychosis and responded well to antipsychotics and benzodiazepine. The most difficult symptom to manage was the impairment in concentration which persisted for more than couple of months post injury.

General consensus in the management of the patient following traumatic head injury depends upon the symptom profile of the patient. Occupational therapy, physiotherapy, speech therapy, vocational training, cognitive rehabilitation and pharmacological interventions have been used for the improvement of specific cognitive deficits.[16] Environmental interventions are often the preferred means of managing agitation in the acute post-TBI however, in the absence of response to behavioural and environmental modification, and in the later stages of recovery, pharmacology is frequently used.[18] SSRI's are considered first line as they are usually safe and well tolerated.[19] Mood-stabilizing antiepileptic drugs have proved effective, in particular valproate and carbamazepine.[20]

Atypical antipsychotics, particularly olanzapine, are considered to be first line treatment of TBI psychosis.[1] Cognitive behavioural therapy, neurorehabilitation and psychotherapy are important in the treatment of anxiety and related disorders post TBI.[21]

Conclusion

TBI undoubtedly increase the vulnerability for psychiatric illness in some individuals and seems to make patients particularly susceptible to depressive episodes, personality disturbances with lability of mood, psychomotor agitation and also affective psychosis. In spite of intact orientation patient may present with cognitive and mood disturbances following trauma to temporal lobe injury, these sequel might be delayed in onset and may worsen the clinical picture as well as slow down the recovery of the patient. It is thus, imminent to identify correctly and manage the plethora of symptoms that present post temporal lobe injuries through integrative approach and liaison with various multi-specialities.

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Case Report

Mirtazapine induced somnambulism in a case of Geriatric Depression

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Introduction

Somnambulism, or so-called sleepwalking, is classified as a parasomnia in DSM-5 and consists of complex motor activities, including eating, talking or walking during sleep. It occurs in the first third of the sleep cycle and sometimes may be harmful to the patient or to others. A number of anecdotal case reports exist for different psychotropic agents and somnambulism and these include SSRIs,[2] Bupropion,[3] tricylic antidepressants,[4-5] Risperidone[6] and Zolpidem.[7] Mirtazapine has also been reported to induced somnambulism in two separate case reports.[8-9] We present here a case of a 68 year old man with depression who developed somnambulism after starting mirtazapine for the management of depression.

Case Report

A 68 year old retired male (previously teacher by profession) with a history of depression since 8 years prior to presentation visited a private psychiatric clinic for treatment. He came with his son for treatment as he used to stay with his son who was divorced, while his wife had passed away a year ago. His family physician had started him on Mirtazapine in doses at 30 mg/day for depression which had resulted in a 90% improvement in his symptoms but the emergence of a new symptom bothered him. He was initially started on 15 mg of mirtazapine and showed 70% improvement over 3 weeks of treatment. The dose was then increased to 30 mg at night to further enhance improvement. At a dose of 30 mg within 2 days of starting treatment, the patient had an episode of getting up and walking about in the house with a dazed expression and some muttering to self. He would open the fridge and remove a few things and these episodes would occur for 25-30 minutes each night. The patient would go and lie down in his bed and sleep after these events. The patient showed no response to any conversation or commands when spoken to during these episodes. When his son tried to shake him and wake him up during these episodes, the patient pushed the son away and kept walking. His son would follow him all around the house till the patient slept again. The next morning, the patient claimed no memory of what transpired the previous night. The episodes were attributed to 30mg of mirtazapine as they did not occur when the dose was 15 mg. The family physician referred him to the psychiatric clinic for an opinion and on reduction of the dose to 15 mg the symptoms abated completely.

Discussion

Somnambulism or sleep walking occurs during the stages of slow wave sleep. The prevalence of somnambulism is 1.6-2.4% in adults.[10] The causes and neurobiology of somnambulism are unclear, but medication, high fever, sleep deprivation and illnesses like obstructive sleep apnea syndrome have been associated with the condition.[11]

Mirtazapine is a noradrenergic and specific serotonergic antidepressant that blocks central presynaptic α_2 autoreceptorsand heteroreceptors, to control norepinephrine and serotonin release, and blocks specific postsynaptic 5-HT2A, 5-HT2C and 5-HT3 receptors. It is also a potent antagonist of H1 receptors, which accounts for the somnolence and weight gain related to the drug.[12] Laboratory

studies have demonstrated mirtazapine to cause increased slow wave or deep sleep.[13] In the case we have described above, there was no evaluation done by a sleep medicine expert, but electro-encephalographic evaluation revealed no signs suggestive of any seizure disorder or other abnormality. It is worthwhile hypothesizing why the somnambulism occurred at 30 mg while did not occur at 15 mg. Serotonin has been hypothesized to be the cause of somnambulism, particularly at the 5-HT2 receptor.[14]

The varying affinities to 5-HT2 and H1 receptors at different dosages of mirtazapine could probably explain the patient experiencing sleep-walking episodes exclusively at a high dose mirtazapine.[15] We continued the patient on 15 mg of mirtazapine and after a period of 15 days decided to challenge the patient again (with his consent) with a dose of 30 mg. on starting 30 mg within 2 days once again the patient had an episode of somnambulism. This was observed and reported by his son again who had kept awake to do so and showed us a recording of the same. As per Naranjo algorithm we obtained a score of +7 for somnambulism associated with Mirtazapine.[16] Clinicians must be vigilant about this rare yet dangerous adverse effect related to mirtazapine and must exercise caution when administering the drug in the elderly and special populations.

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Case Report

Mood disorder in Intellectual Disability

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Intellectual disability (ID) is the term used to define a developmental disorder characterized by both intellectual and adaptive deficits, affecting nearly 1% of the population.[1] It is often seen to exist with a number of psychiatric comorbidities like ADHD, autism, schizophrenia, mood disorders, which can possibly be conceived as lying along a continuum of genetically and environmentally induced neurodevelopmental causality.[1,2] The prognosis and outcome of co-occurring diagnoses may be influenced by the presence of intellectual disability. Individuals with mental retardation (MR) have been found to manifest the full range of affective disorders.[3] But, owing to intellectual disability, limitations in verbal ability of patients and occasional atypical presentation, it is often difficult to use the standard psychiatric diagnostic interviews and diagnostic criteria in this population.[4,5] The data on comorbid mood disorder and intellectual disability is limited. We present here a case of a middle aged man with affective symptoms with history of intellectual disability.

Case report

A 45 year old man was brought to the outpatient department with the chief complaints of shouting, aggressive abusive behaviour, increased talkativeness, increased physical activity and decreased sleep since last 3 months. Detailed history revealed that the patient had started talking more than usual and would often go to the neighbour's house and ask for food. When his sister would scold him for the same he would shout at her and even hit her, which he would not normally do. He would also get up early in the morning most of the days and start roaming in the village and at times come back only at night. The family members would look for him the entire day, and on finding him when they would attempt to bring him back, he would get aggressive. Past history revealed 6-7 similar episodes of aggressive behaviour, increased talkativeness, increased physical activity, decreased sleep in the past, the first one being at the age of 25 years of age. When the patient had the first episode, treatment had been started. Since then the patent had been on treatment most of the time, and had episodes despite ongoing treatment. There was history of tobacco chewing in the patient. Family history was not contributory. Developmental history revealed delayed cry at birth, delayed motor and language milestones and patient still required assistance in his activities of daily living. The patient had never attended school or been employed. He was even unable to perform minor household chores. The patient's I.Q assessment had been done previously using Binet Kamat test revealing a score of 60, suggestive of mild mental retardation.[6]

At the time of presentation in our department the general physical examination was within normal limits. Systemic examination was within normal limits. Mental status examination revealed middle aged male with poor hygiene, well sustained eye to eye contact, increased psychomotor activity, increased amount of speech with reduced reaction time, labile affect, with circumstantiality in thinking. Haemogram, serum electrolytes, liver and renal function tests did not reveal any abnormalities. Magnetic resonance imaging of brain did not report any significant abnormality.

A diagnosis of bipolar affective disorder, current episode of mania without psychotic symptoms with mild intellectual disability was kept as per ICD-10.[7] The patient was already on treatment with Risperidone 2 mg HS, Trihexyphenidyl 2 mg HS and Clonazepam 0.5 mg HS, but the symptoms were exacerbating. So the patient was started on sodium valproate 500 mg BD, Risperdone 2 mg BD. and Trihexiphenidyl 2 mg OD. The family was psycho-

educated regarding the nature of the illness and the importance of compliance to treatment. Within a fortnight there was reduction in severity of the manic symptoms.

Discussion

Patients with mental subnormality are often underdiagnosed due to their lack of verbal expression, thus being unable to fulfil the diagnostic criteria. Diagnosis is challenging and although patients with mild retardation can be diagnosed by self-report measures and standard criteria, patients with moderate and severe retardation often require use of residual categories.[5]

Another factor leading to delay in the diagnosis could be assuming the symptoms to be a part of retardation.[8] So far, only few such cases of bipolar mood disorder have been reported.[5,9]

Intellectual disability is associated with a number of comorbidities like ADHD, autism, etc. It is often difficult to distinguish between mood disorders and hyperactivity in intellectually disabled children because of the lack of ability to express properly. In such cases, the history and the chronology of the events become very important. Appearance of symptoms for the first time at the age of 25 years and sleep impairment with no past history were the main pointers towards bipolar disorder in this patient.

It interesting to note the that, given genetic findings, intellectual disability, epilepsy, autism, ADHD, schizophrenia and possibly the major affective disorders all seem to lie on a continuum of genetically and environmentally induced neuro-developmental causality.[2] So, the co-occurrence of intellectual disability with mood disorders, though less reported, should not be a surprise to us!

We started the patient on treatment with sodium valproate 1000 mg/day. A follow-up study of Kastner et al. demonstrated efficacy of valproic acid on affective symptoms of individuals with mental retardation[10] Lithium is another drug that has been used for the treatment of bipolar disorder with considerable success.[9,11] In unmanageable cases ECT can also be given.[12] Patients of mental retardation are more prone to the adverse effects of medication, hence the lowest possible dose should be started and increased slowly.

To conclude, due to the varied and sometimes atypical presentation of bipolar disorder in such patients, it is very important to take a very detailed history of the symptoms from the family members to arrive at a correct diagnosis. The approach of the clinician has to be out of the box, different from the conventional, in order to successfully diagnose and treat these challenging cases.

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World Health Day 2017

Depression-Let's Talk

Key Messages

Depression is a common mental disorder that affects all.

The risk is increased by poverty, unemployment, life events such as the death of a loved one or a relationship break-up, physical illness and problems caused by alcohol and drug use.

Depression causes mental anguish and can impact people's ability to carry out even the simplest everyday tasks, with sometimes devastating consequences for relationships with family and friends.

Untreated depression can prevent people from working and paticipating in family and community life.

At worst, depression can lead to suicide, now the second leading cause of death among 15-29-year olds globally.

Depression can be effectively prevented and treated. Tratment usually involves either psychotherapy or antidepressant medication or a combination of these.

Overcoming the stigma often associated with depression will lead to more people seeking help.

World Health Day, celebrated on 7 April every year to mark the anniversary of the founding of the World Health Organization, provides a unique opportunity to mobilize action around a specific health topic of concern to people all over the world. The theme of 2017 World Health Day campaign is **depression**.

What is depression?

Depression is an illness characterized by persistent sadness and a loss of interest in activities that you normally enjoy, accompanied by an inability to carry out daily activities, for at least two weeks.

In addition, people with depression normally have several of the following symptoms:

- Loss of energy;
- Change in appetite;
- Sleeping more or less;
- Anxiety;
- Reduced concentration;
- Indecisiveness;
- Restlessness;
- Feelings of worthlessness, guilt, or hopelessness;
- Thoughts of self-harm or suicide.

What is the burden of depression?

- ***Globally:***
  - WHO estimates that one in four people in the world will be affected by mental or neurological disorders at some point in their lives. Around 450 million people currently suffer from such conditions.

  - An estimated 350 million people are affected with depression. At its worst, it can lead to suicide, over 800,000 people die due to suicide every year.
- ***In India:***
  - In India, the National Mental Health Survey 2015-16 data reveals that nearly 15% Indian adults need active intervention for one or more mental health issues.
  - One in 20 Indians suffers from depression. It is estimated that in 2012, India had over 258,000 suicides, with the age-group of 15-29 years being most affected.

What is the campaign?

The *overall goal* of this one-year campaign is that more people with depression, in all countries, seek and get help.

More *specifically*, it is aimed at creating a better informed general public on depression, its causes and possible consequences, including suicide, and help available for prevention and treatment; encouraging people with depression to seek help; and facilitating family, friends and colleagues of people living with depression, to provide support.

At the core of the campaign is the importance of talking about depression as a vital component of recovery. The stigma surrounding mental illness, including depression, remains a barrier to people seeking help throughout the world.

Talking about depression, whether with a family member, friend or medical professional; in larger groups, for example in schools, the workplace and social settings; or in the public domain, in the news media, blogs or on social media, helps break down this stigma, ultimately leading to more people seeking help.

What is the slogan?

The campaign slogan is: Depression: Let's talk.

Who are we reaching out?

Depression can affect anyone. This campaign is for everyone, whatever your age, sex, or social status.

While the World Health Day 2017 campaign will be broad-based, the focus will be on vulnerable population, including demographic vulnerability (young people, women, elderly), geographical and financial vulnerability etc.

Further details can be accessed at

http://www.searo.who.int/india/mediacentre/events/world_health_day/whd_2017/en/

Interesting Articles

1. **Predicting suicide following self-harm: systematic review of risk factors and risk scales.** Melissa K.Y. Chan et al. BJP October 2016; 277-283.
2. **Efficacy of omega-3 highly unsaturated fatty acids in the treatment of depression.** Brian Hallahan, et al. BJP September 2016; 192-201.
3. **Increased mortality among people with anxiety disorders: total population study.** Sandra M. Meier et al. BJP September 2016; 216-22.
4. **Combining escitalopram and cognitive–behavioural therapy for social anxiety disorder: randomised controlled fMRI trial.** Malin Gingnell et al. BJP September 2016; 229-235.
5. **Virtual reality in the treatment of persecutory delusions: randomised controlled experimental study testing how to reduce delusional conviction.** Daniel Freeman et al. BJP July 2016; 62-67.
6. **Evaluation of a cognitive psychophysiological model for management of tic disorders: an open trial.** Kieron O'Connor, et al. BJP July 2016; 76-83.
7. **The FDA's failure to address the lack of generalisability of antidepressant efficacy trials in product labelling.** Mark Zimmerman, BJP June 2016; 512-514.
8. **Transcranial direct current stimulation for acute major depressive episodes: meta-analysis of individual patient data.** André R. Brunoni et al. BJP June 2016; 522-531.
9. **Behavioural and psychological symptoms in dementia and the challenges for family carers: systematic review.** Alexandra Feast, et al. BJP May 2016; 429-434.
10. **Trichotillomania. Jon E. Grant, et al.** AJP September 2016; 173(9) : 868–874.
11. **The Effect of Concomitant Treatment With SSRIs and Statins: A Population-Based Study.** Ole Köhler et al. AJP August 173(8) : 807–815
12. **Messages for Clinicians: Moderators and Mediators of Treatment Outcome in Randomized Clinical Trials.** Helena Chmura Kraemer. APJ July 173(7) : 672–679.
13. **Selective Serotonin Reuptake Inhibitors Decrease Pancreatic Insulin Secretion in Older Adults and Increase the Risk of Insulin Dependence in Type 2 Diabetes Patients.** Raymond Noordam, et al. J Clin Psychiatry (JCP). September 2016; e1124.
14. **Early Nonresponse in the Antipsychotic Treatment of Acute Mania: A Criterion for Reconsidering Treatment? Results From an Individual Patient Data Meta-Analysis.** Carlijn C.M. Welten et al. JCP September 2016; e 1117.
15. **When Should a Patient Be Declared Recovered From a Major Depressive Episode?** Boadie W. Dunlop. JCP August 2016; e1026.
16. **Cardiometabolic Risks in Schizophrenia and Directions for Intervention 2: Nonpharmacological Interventions.** Chittaranjan Andrade. JCP August 2016; e964.
17. **Suicide Risk Assessment in Hospitals: An Expert System-Based Triage Tool.** Isabelle Desjardins et al. JCP July 2016; e874.
18. **Cardiometabolic Risks in Schizophrenia and Directions for Intervention, 1: Magnitude and Moderators of the Problem.** Chittaranjan Andrade. JCP July 2016; e844.
19. **To Use or Not? Evaluating Aspects of Smartphone Apps and Mobile Technology for Clinical Care in Psychiatry.** John B. Torous et al. JCP July 2016; e734.
20. **Clustering Suicide Attempters: Impulsive-Ambivalent, Well-Planned, or Frequent.** Jorge Lopez-Castroman et al. JCP July 2016; e711.
21. **Mental Health Care Bill, 2016: A boon or bane?** Rao GP et al IJP 2016; 58(3) : 241.
22. **Management of OCD with bipolar disorder.** Kazhungil F, Mohandas E. IJP 2016; 58(3) : 259.
23. **Comparison of internet addiction, pattern and psychopathology between medical and dental students.** Gedam SR, et al. Asian J Psychiatry August 2016; 105-110.

Forthcoming Events

Conferences and Meetings on Psychiatry

1. **ANCIAPP2016 — 17th Annual National Conference of Indian Association of Private Psychiatry, 2016.** 03 Nov 2016 - 06 Nov 2016; Location: Kolkata, India; Contact: Zishan Shaikh; Phone: 9967067223; Email: info@anciapp2016.com; Event Website: http://anciapp2016.com/
2. **Euro Psychiatrists 2016 — 4th Euro-Global Psychiatrists Meeting 2016;** 10 Nov 2016 - 11 Nov 2016; Location: Alicante, Spain; Contact: Adriana Morris; Phone: 7025085200; Email: europsychiatrysumitt@psychiatryconferences.com; Event Website: http://psychiatry.global-summit.com/europe/
3. **ISBS — International Neuroscience and Biological Psychiatry ISBS Symposium "Translational Neuroscience of Stress";** 10 Nov 2016 - 11 Nov 2016; Location: San Diego, United States; Contact: NA Nutsa; Phone: + 1 240 899 9571; Email: isbs.congress@gmail.com; Event website: http://www.scribd.com/doc/274040475.
4. **WPA 2016 — World Psychiatric Association International Congress;** 18 Nov 2016 - 22 Nov 2016; Location: Cape Town, South Africa; Contact: Charlene Jansen; Phone: 27114635085; Email: charlene@soafrica.com; Event website: http://www.wpacapetown2016.org.za
5. **WASP2016 — XXII World Congress of Social Psychiatry;** 30 Nov 2016 - 04 Dec 2016; Location: New Delhi, India; Contact: Prof Rakesh Chadda; Email: drrakeshchadda@gmail.com; Event Website: http://www.wasp2016.com/index.php
6. **Mind, Mood and Microbes — The first international conference on microbiota-gut-brain axis.** 01 Dec 2016 - 02 Dec 2016; Location: Amsterdam, Netherlands; Contact: HeleenBastiaanse; Email: heleen@bastiaanse-communication.com; Event website: http://www.mindmoodmicrobes.org
7. **ISBS — 10th International Neuroscience and Biological Psychiatry ISBS Regional (S. America) Conference "Neuroscience of Stress";** 01 Dec 2016 - 03 Dec 2016; Location: Rio de Janeiro, Brazil; Contact: NA Nutsa; Phone: + 1 240 899 9571; Email: isbs.congress@gmail.com; Event website: http://www.scribd.com/doc/274041339.
8. **CongresoTCC — First National Congress of Behavioural and Cognitive Therapy: Health care, a holistic view of treatment.** 02 Dec 2016 - 04 Dec 2016; Location: Mexico City, Mexico; Contact: Hugo de Lira; Phone: + (52 55) 5740-2442; Email: hugo.delira@incosame.com.mx; Event website: http://www.congresotcc.com
9. **16 IFMAD — International forum on Mood and Anxiety Disorders.** 08 Dec 2016 - 10 Dec 2016; Location: Rome, Italy; Contact: LeonettaBaldini; Phone: +37797973554; Email: leonetta.baldini@publicreations.com; Event website: http://www.ifmad.org
10. **Training — Transforming Mental Health Services for Children & Young Adults.** Start date: 30 Jan 2017 Location: London, United Kingdom; Contact: Kerry Tarrant, Healthcare Conferences UK, 8 Wilson Drive, Ottershaw, Surrey KT16 0NT; Phone: 0044/1932 429933; Email: kerry@hc-uk.org.uk; Event website: http://www.healthcareconferencesuk.co.uk/mental-health-services
11. **International conference for Women health and Breast cancer.** 06 Apr 2017 - 08 Apr 2017; Location: Dubai, United Arab Emirates; Contact: G Hima Bindu; Phone: +91-7799790001; Email: womens_health@scientificfederation.com; Event website: http://scientificfederation.com/women-health-2017/index.php
12. **18th world congress of WADP — 'Creative processes in psychotherapy and psychiatry'.** 19 Apr 2017 - 22 Apr 2017; Location: Florence, Italy; Event website: http://wadp2017.org
13. **ISCP2017 — 24th International Symposium about Current Issues and Controversies in Psychiatry (Barcelona & Live Video Streaming).** 20 Apr 2017 - 22 Apr 2017; Location: Barcelona, Spain; Contact: Jaume Magrans; Phone: +34 934 108 646; Email: secretaria@controversiasbarcelona.org**;** Event website: http://www.controversiasbarcelona.org

14. **6th World Congress on ADHD — 6th World Congress on ADHD.** 20 Apr 2017 - 23 Apr 2017. Location: Vancouver, Canada; Contact: Christian Reim; Phone: +49406708820; Email: adhd@cpo-hanser.de; Event website: http://www.adhd-congress.org
15. **Of mice and mental health: facilitating dialogue between basic and clinical neuroscientists.** 24 Apr 2017 - 25 Apr 2017; Location: London, United Kingdom; Contact: Email: discussion.meetings@royalsociety.org; Event website: https://royalsociety.org/science-events-and-lectures/2017/04/mental-health/
16. **XXIInd Congress of the International Society of Rorschach and Projective Methods.** 17 Jul 2017 - 21 Jul 2017; Location: PARIS, France; Contact: Email: contact@rorschachparis2017.org; Event website: http://www.rorschachparis2017.org/en
17. **WPA XVII World Congress of Psychiatry Berlin 2017.** 08 Oct 2017 - 12 Oct 2017; Location: Berlin, Germany; Contact: CPO HANSER SERVICE; Phone: [+49303006690]; Email: wpa2017@cpo-hanser.de; Event website: http://www.wpaberlin2017.com

Conferences and Meetings on Psychology

1. **WARMCAMP — Workshop and Roving Mezzanine Conference of Applied Military Psychology.** ID 806346; Dates 04 Nov 2016 - 06 Nov 2016; Location: Jaipur, India. Abstract: International conference on Military Psychology and Counseling. Contact: Lt. Col. (R) Dr. Samir Rawat; Email: samtanktrooper@gmail.com; Topics: Psychology, military, conference, Warmcamp, soldier Home front; Event Website: http://www.militarymindacademy.com
2. **CRCP2016 — Caribbean Regional Conference of Psychology.** Start Date: 07 Nov 2016 - 11 Nov 2016; Location: Port Au Prince, Haiti; Event website: http://www.crcp2016.org/
3. **32nd Annual Meeting, International Society for Traumatic Stress Studies;** 10 Nov 2016; Location: Dallas, Texas, United States; Event website: http://www.istss.org/meetings-events/events-calendar/istss-32nd-annual-meeting.aspx
4. **Training — Improving the Quality of Perinatal Mental Health Services.** Start date: 11 Nov 2016; Location: London, United Kingdom; Contact: 8 Wilson Drive, Ottershaw, Surrey KT16 0NT; Phone: 0044/1932 429933; Email: kerry@hc-uk.org.uk; Event website: http://www.healthcare conferencesuk.co.uk/perinatal-mental-health-services-conference
5. **5th Health and Wellbeing in Children, Youth, and Adults with Developmental Disabilities Conference, Moving from Diagnosis to Practical Strategies;** 16 Nov 2016 - 18 Nov 2016; Location: Vancouver, Canada; Event website: http://interprofessional.ubc.ca/HealthandWellbeing2016/default.asp
6. **II International Congress and VI National Symposium of Clinical and Health Psychology on Children and Adolescents;** 17 Nov 2016 - 19 Nov 2016; Location: Barcelona, Spain; Contact: José Pedro Espada. President of the Organizing Committee.; Phone: +345222071; Email: investigacion.aitana@gmail.com; Event website: http://psicologiainfantil.umh.es/
7. **Mind Care 2016 — 6th EAI International Symposium on Pervasive Computing Paradigms for Mental Health;** 28 Nov 2016 - 29 Nov 2016; Location: BARCELONA, Spain; Contact: Jana Haluskova; Email: jana.haluskova@eai.eu; Clinical Data Management, e-Health, Neurology; Event website: http://mindcaresymposium.org/2016/show/home
8. **WASP2016 — XXII World Congress of Social Psychiatry.** 30 Nov 2016 - 04 Dec 2016; Location: New Delhi, India; Contact: Prof Rakesh Chadda; Email: drrakeshchadda@gmail.com; Event Website: http://www.wasp2016.com/index.php
9. **Mind, Mood and Microbes — The first international conference on microbiota-gut-brain axis.** 01 Dec 2016 - 02 Dec 2016; Location: Amsterdam, Netherlands; Contact: Heleen Bastiaanse; Email: heleen@bastiaanse-communication.com; Event website: http://www.mindmoodmicrobes.org
10. **CongresoTCC — First National Congress of Behavioural and Cognitive Therapy: Health care, a holistic view of treatment.** 02 Dec 2016 - 04 Dec 2016; Location: Mexico City, Mexico; Contact: Hugo de Lira; Phone: + (52 55) 5740-2442; Email: hugo.delira@incosame.com.mx; Event

website: http://www.congresotcc.com

11. **International Congress of Behavioural Medicine.** 07 Dec 2016 - 10 Dec 2016; Location: Melbourne, Victoria, Australia; Event website: http://www.icbm2016.com/
12. **MCI2017 — 15th Annual MCI Symposium, Special Topic Workshop & Alzheimer's Public Forum.** 14 Jan 2017 - 15 Jan 2017; Location: Miami Beach, United States; Contact: Conference Secretariat; Phone: [1.224.938.9523]; :meetings@worldeventsforum.com; Event website: http://www.mcisymposium.org/
13. **Training — Masterclass: Using Psycho-Social Interventions to Help People with SMI Quit Smoking.** Start date: 16 Jan 2017; Location: London, United Kingdom; Contact: Kerry Tarrant, Healthcare Conferences Uk, 8 Wilson Drive, Ottershaw, Surrey KT16 0NT; Phone: 0044/1932 429933; Email: kerry@hc-uk.org.uk; Continuing Medical Education (CME); Event website: http://www.healthcareconferencesuk.co.uk/serious-mental-illness-smi-quit-smoking
14. **Training — Eating Disorders Summit: Rapid Early Intervention & Developing a Gold Standard Service.** Start date: 16 Jan 2017; Location: London, United Kingdom; Contact: Kerry Tarrant, Healthcare Conferences Uk, 8 Wilson Drive, Ottershaw, Surrey KT16 0NT; Phone: 0044/1932 429933;Email: kerry@hc-uk.org.uk; Event website: http://www.healthcareconferencesuk.co.uk/eating-disorders
15. **Medical CBT for Anxiety: Ten-Minute Techniques for Real Doctors (Mexico, 2017).** 18 Jan 2017 - 20 Jan 2017; Location: Playa del carmen, Mexico; Contact: CBT Canada; Phone: 8774668228; Email: registrar@cbt.ca Event website: http://cbt.ca/locations/cbt-mexico/
16. **Training — Masterclass: Meeting the Psychological needs of Unaccompanied Asylum-Seeking & Refugee Young People.** Start date: 23 Jan 2017; Location: London, United Kingdom; Contact: Kerry Tarrant, Healthcare Conferences Uk, 8 Wilson Drive, Ottershaw, Surrey KT16 0NT; Phone: 0044/1932 429933; Email: kerry@hc-uk.org.uk; Event website: http://www.healthcareconferencesuk.co.uk/psychological-needs-of-unaccompanied-asylum-seeking-and-refugee-young-people
17. **Training — Self Neglect and Adult Safeguarding.** Start date: 27 Jan 2017. Location: London, United Kingdom. Contact: Kerry Tarrant, Healthcare Conferences Uk, 8 Wilson Drive, Ottershaw, Surrey KT16 0NT; Phone: 0044/1932 429933; Email: kerry@hc-uk.org.uk; Event website: http://www.healthcareconferencesuk.co.uk/self-neglect-safeguarding
18. **NACIACP2017 — 43rd National Annual Conference of Indian Association of Clinical Psychologists 2017.** 27 Jan 2017 - 29 Jan 2017; Location: Coimbatore, India; Contact: Dr. D. Dhanapal, Conference Director-Naciacp2017; Phone: +91 8883331732; Email: naciacp2017@yahoo.com Event website: http://www.naciacp2017.com
19. **Training — Transforming Mental Health Services for Children & Young Adults.** Start date: 30 Jan 2017; Location: London, United Kingdom; Contact: Kerry Tarrant, Healthcare Conferences Uk, 8 Wilson Drive, Ottershaw, Surrey KT16 0NT; Phone: 0044/1932 429933; Email: kerry@hc-uk.org.uk; Event website: http://www.healthcareconferencesuk.co.uk/mental-health-services.
20. **Medical CBT for Anxiety: Ten-Minute Techniques for Real Doctors (Bahamas, 2017).** 09 Feb 2017 - 11 Feb 2017; Location: Paradise Island, The Bahamas; Contact: CBT Canada; Phone: 8774668228; Email: registrar@cbt.ca; Event website: http://cbt.ca/locations/cbt-atlantis/
21. **Medical CBT for Anxiety: Ten-Minute Techniques for Real Doctors (Las Vegas, 2017).** 15 Feb 2017 - 17 Feb 2017; Location: Las Vegas, United States; Contact: CBT Canada; Phone: 8774668228; Email: registrar@cbt.ca; Event website: http://cbt.ca/locations/cbt-las-vegas/
22. **Medical CBT for Depression: Ten-Minute Techniques for Real Doctors (Whistler, 2017).** 20 Mar 2017 - 22 Mar 2017; Location: Whistler, Canada; Contact: CBT Canada; Phone: 8774668228; Email: registrar@cbt.ca; Event website: http://cbt.ca/locations/cbt-whistler-winter/
23. **Biennial Meeting of the Society for Research in Child Development.** 06 Apr 2017 - 08 Apr 2017; Location: Austin, Texas, United States; Event website: http://www.srcd.org/meetings/biennial-meeting
24. **ADI 2017 — 32nd International Conference of Alzheimer's Disease International.** 26 Apr

2017 - 29 Apr 2017; Location: Kyoto, Japan; Contact: Phone: +44 (0) 1730 715 248; Email: adi2017@mci-group.com Event website: http://www.adi2017.org

25. **Western Psychological Association Annual Meeting 2017.** 27 Apr 2017 - 30 Apr 2017; Location: Sacramento, United States; Event website: http://westernpsych.org/convention/
26. **In PACT 2017 — International Psychological Applications Conference and Trends 2017.** 29 Apr 2017 - 01 May 2017; Location: Budapest, Hungary; Contact: Tom Alderson; Email: secretariat@inpact-psychologyconference.org; Event Website: http://www.inpact-psychologyconference.org/
27. **18th Congress of the European Assocaition of Work and Organizational Psychology.** 17 May 2017 - 20 May 2017; Location: Dublin, Ireland; Event website: http://www.eawop2017.org
28. **SCAP 2017 — 2017 Singapore Conference on Applied Psychology.** 29 Jun 2017 - 30 Jun 2017; Location: Singapore, Singapore; Contact: Anthony Tan; Phone: 62033767; Email: anthonytan@ear.com.sg; Event website: http://scap.ear.com.sg/
29. **Movement-2017:Brain, Body, Cognition.** 09 Jul 2017 - 11 Jul 2017; Location: Oxford, United Kingdom; Contact: Prof. Gerry Leisman; Phone: 1-516-301-5305; Email: g.leisman@alumni.manchester.ac.uk; Event website: http://www.movementis.com
30. **ISSP — 14th World Congress of Sport and Exercise Psychology.** 10 Jul 2017 - 14 Jul 2017; Location: Seville, Spain; Event website: http://www/issp2017/com
31. **XXIInd Congress of the International Society of Rorschach and Projective Methods.** 17 Jul 2017 - 21 Jul 2017; Location: PARIS, France; Contact: Email: contact@rorschachparis2017.org; Event website: http://www.rorschachparis2017.org/en
32. **BCANDS 2017 - "From theOutside Looking In..." - Indigenous Disability and Wellness Gathering.** 28 Nov 2017 - 30 Nov 2017; Location: Victoria, Canada; Event website: http://bcands2017gathering.com/
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34. **Biennial Meeting of the Society for Research in Child Development.** 21 Mar 2019 - 19 Mar 2019; Location: Baltimore, Maryland, United States; Event website: http://www.srcd.org/meetings/biennial-meeting
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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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