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Editorial

Homelessness and Mental Illness : Challenges, impact and scope in India

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Homelessness a psychosocial construct intersects with mental illness and is often a complicated and overlooked crisis. Kaur and Pathak highlighted the urgent need for redefinition of homelessness to collect reliable data, to identify mental health problems in homeless population, to address the policy gaps and help in assisting the policy makers to focus on these populations requirements better.[1] Homeless persons in our country end up living on the streets, in jails, in beggar homes, or incarcerated in mental hospitals life-long. In our experience even those who have improved and can cohabit in the society are also bound into institutions due to deficit in infrastructure like half way home and sheltered accommodations or lack of policy for job creations and provision for such patients. Those living in available half way homes even capable of sustaining get stuck there with not much scope of free life outside due to the stigma, awareness, given policy and infrastructure or lack thereof.

Present Status

It is an unfortunate reality that homeless with mental illness in our country many a times face violations of their right and also needed judicial intervention for treatment and admission of mental illness. However, after Mental Health Care Act (MHCA) 2017, the protection of rights of persons with mental illness including those homeless have been given due credence. It also reduced the need of mandatory requirement of judicial intervention for care and shifted the policy to state. But, even eight years down the lane, country, healthcare, and the system are still struggling to improve the services for this vulnerable population.

Many initiatives were started in different states addressing the homelessness in persons with mental illness, but it was more focused for mental awareness and treatment rather than addressing the aspects of homelessness consequent to mental illness. Outreach services and community support initiatives such as Health Initiative Group for the Homeless, Koshish by the Tata Institute of Social Sciences in Mumbai and Delhi, and Adaikalam by The Banyan in Chennai had tried to address the need to a certain extent.

Any person found homeless with suspected mental illness wandering the streets is taken by Police into custody as per Section 100 of MHCA 2017 to the nearest mental health establishment for evaluation by a mental health expert. Accordingly, the person is given treatment. However, there are many challenges in this process, firstly law enforcement agencies lack awareness and sensitization towards the mental illness, MHCA and their role in it. Second, mental health establishment struggles to find a nominated representative for the homeless patients. As per MHA responsibilities have been directed towards state however in the lack of state mental health rules in many states of the country, implementation in practices is difficult. Finally, reintegration and rehabilitation of the homeless is very difficult. Many a times family even if traced are unwilling to take the patient back or in the cases where not traced is shifted to a half way home. Either the cases homeless remains homeless even when improved enough to cohabit in a society.

Causes and consequences of mental illness and Homelessness

The 2011 Census reported approximately 1.77

million homeless individuals, with estimates suggesting that 20–25% of this population suffers from severe mental illnesses. National Mental Health Survey (NMHS) of India estimates that approximately 1% of individuals with mental illness are homeless, equating to about 15,000 people across various states.[2] A study conducted in a North Indian Medical University found that 90.7% of homeless individuals had psychiatric illnesses, with 44.3% having co-morbid substance abuse issues.[3] Similarly, a survey in Tamil Nadu revealed that 32.65% of women with mental illness had experienced homelessness.[4] To compare with Western world , numbers are not that different. Studies have estimated that up to 67% of the homeless population in the U.S. has a current mental illness, with a significant proportion suffering from severe disorders such as schizophrenia or bipolar illness.[5]

The relationship between mental illness and homelessness is bidirectional. Mental health disorders can contribute to an individual's inability to maintain stable housing due to factors like impaired judgment, lack of insight, and difficulty managing daily tasks. Conversely, homelessness can exacerbate existing mental health conditions due to stress, trauma, and lack of access to care. A study by The Banyan, a Chennai-based institution, identified factors such as disrupted relationships and low educational attainment as significant contributors to homelessness among women with mental illness.[6]

The consequences of homelessness on mental health are profound and multifaceted. Individuals experiencing homelessness are at increased risk for a range of mental health issues, including anxiety, depression, and post-traumatic stress disorder (PTSD).[7-9] The lack of stable housing, exposure to violence, substance abuse, and social isolation contribute to the deterioration of mental well-being.

Moreover, the stigma associated with both homelessness and mental illness can lead to social exclusion, discrimination, and reduced access to necessary services. These factors create a vicious cycle that is challenging to break without comprehensive intervention.

Even during the COVID 19 outbreak, serious concerns were raised in relation to this population regarding not only their mental health but also that they may become the source or can contact COVID 19 infection inadvertently. In those days, any person found homeless were taken into shelter homes and mild behavioral irregularities even anger towards authority would warrant investigation into their mental state.[10]

Interventions and Solutions

Addressing the dual challenges of homelessness and mental illness in India requires integrated and multifaceted approaches. Tracing of families of homeless persons with mental illness through police, personal contact, information by the patient, and in current era facebook, social media, webpage and online even Aadhar-based identification are tried. Studies have reported family-based reintegration ranges from 47.6% to 83.5% while community-based ranges from 8.6% to 41.5% indicating higher reintegration with family. Predictors for better reintegration are substance use disorder and improved patients with psychotic illness. Those with poor insight, active symptoms and intellectual impairment have comparatively less chances of reintegration.[11]

NGOs like Ashadeep in Guwahati, Banyan in Chennai, SEARCH (Society for Education, Action and Research in Community Health) in Gadchiroli, Jan Sahas Social Development Society in Madhya Pradesh, Snehalaya in Ahmednagar are some of the very few who have been working tirelessly for the rehabilitation and care of person with mental illness. While the country have been largely reliant on NGOs for rehabilitation Western world approaches like "Housing First" or "Assertive Community Treatment" are more structured and supported by policy. This comparison underscores the need for culturally adapted, resource-sensitive interventions that consider the distinct pathways into homelessness and mental health distress in different global contexts. Mobile mental health unit of IHBAS, also tries to engage homeless persons with mental illness within jurisdiction of Delhi "in a public domain" into treatment with the assistance of law enforcement agencies and ethical correctness. This model can also be replicated in other states.

Research has shown that psychosocial interventions can be effective in improving outcomes for this population. A study conducted in a rehabilitation center in South India highlighted the importance of psychosocial preparedness in facilitating recovery

among homeless individuals.[12] Along with psychosocial interventions, policies for vocational rehabilitation, financial support, residential support can also go a long way in management of Homeless persons with mental illness.[11] Additionally, the Mental Health Care Act of 2017 provides a legal framework for the care and protection of individuals with mental illness, including those who are homeless. The Act emphasizes the rights of individuals with mental illness and mandates the establishment of facilities for their care and rehabilitation. It is important that what is written in ink gets in to reality and practice too.

Conclusion

The intersection of homelessness and mental illness in India presents significant challenges that require coordinated and compassionate responses. The high prevalence of mental health disorders among homeless individuals underscores the need for integrated services that address both housing and mental health needs. Implementing evidence-based interventions, such as psychosocial preparedness programs and leveraging the provisions of the Mental Health Care Act, can lead to improved outcomes and break the cycle of homelessness and mental illness. However, systemic changes, including increased funding for mental health services and affordable housing, are essential to create lasting solutions.

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Review Article

Mental Health Sciences with Medical Anthropology

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Introduction

Medical Anthropology emphasizes in understanding mental health sciences by examining the social and cultural dimensions of health and illness. It underscores the importance of situating mental health conditions within the broader "social matrix" that shapes human experience. Precisely it includes: Cultural Studies in Psychiatry-Anthropological perspectives provide a complementary understanding of psychiatric conditions, shedding light on how emotional and behavioral disruptions are influenced by social circumstances. For example, cultural practices and meanings embedded in local contexts can shape how mental health disorders are understood, experienced, and treated. Beyond the Clinical Lens: Anthropologists illuminate perspectives beyond biomedical frameworks, focusing on how individuals interpret and respond to mental health challenges in their local worlds. This approach prioritizes the lived experiences of individuals and communities, offering insights into the cultural and symbolic dimensions of health. In social context of mental Disorders, Fabrega[1] argues, emotional and behavioral issues often emerge from specific social conditions. Understanding these contexts is essential for addressing mental health in a way that respects the cultural and social realities of affected individuals. Anthropology, and particularly medical anthropology, is indispensable for making sense of the contemporary world. By examining cultural identity, social change, and interconnectedness, anthropology contributes not only to understanding mental health but also to addressing broader societal questions about belonging and identity. This cultural perspective enhances clinical approaches, offering a richer, more holistic view of human health and well-being.

It has been argued the challenges of anthropology that why anthropological knowledge can help in making sense of the contemporary world and had mentioned four main reasons by Eriksen[2] and Singh.[3,4] Drawing from them, the challenges and opportunities for anthropology in modern contexts are delineated through four main reasons: (i) ***Transformation in Anthropological Fieldwork***-anthropological research focused on remote, simple societies and "exotic" cultures during the 19th century. However, this pattern has shifted dramatically. Contemporary anthropologists now examine the dynamics of interconnected, globalized societies, reflecting the broader complexities of the modern world. (ii) ***Shrinking World,*** it means Advancements in technology, communication, and transportation have significantly reduced physical and cultural distances. This interconnectedness makes it essential to study the fluidity of cultures, as boundaries between societies are no longer rigid. Anthropology is increasingly relevant in making sense of these global interrelations. (iii) ***Rapid Cultural Change,*** cultural transformations occur at unprecedented rates, prompting fundamental questions about identity and belonging. Questions like "Who are we really?" and "Should we still prioritize national identity over other forms of belonging?" are critical in a world where traditional markers of identity are being redefined. Anthropology helps decode these shifts by contextualizing identity within broader social, economic, and

political frameworks. (iv) ***Rise of cultural identity,*** it is valued as an asset, shaping individual and collective behaviors. This phenomenon underscores the importance of understanding how identity is constructed, negotiated, and expressed in different cultural contexts. Anthropology offers tools to analyze how these identities influence social cohesion, conflict, and health outcomes.

2. Mental Health Sciences: Anthropology and Psychiatry

Jenkins[5] elaborately expressed that anthropology and psychiatry are interested in human societies. The 1970s and 1980s have witnessed the rapid development and reformulation, wherein a '*new cross-cultural psychiatry'* has emerged from a synthesis of interpretive approaches from anthropology and an increasingly sophisticated academic psychiatry (p. 20-21). Medical Anthropology often finds psychiatry to be a mode of normalizing power, enforced either through disciplinary institutions and practices or by mediating points of entry into local and global pharmaceutical regimes. The most common accusation of anthropology is '*medicalization*' of forms of social distress… rather everyday life events.[6] The mutual relevance of anthropology and psychiatry remains an important concern for scholars and clinicians in the field.[5] Arthur Kleinman[7,8] has highlighted the contribution of anthropology to cross-cultural psychiatry with respect to issues such as translation, the category fallacy in defining psychiatric disorder, and pathoplasticity/pathogenicity, emphasizing anthropology's attention to cultural validity in addition to reliability, and to the relevance of cultural analysis to psychiatry's own taxonomies and methods. Let's see marginality of medical anthropology between medicine and anthropology besides its uncritical relationship with psychiatry.[7,8]

Medical anthropology looks at how people become patients and socio-economic conditions determine- seeking treatment and understanding their own illness.[9] Highlighting Indian medical anthropology Bhatt explains the importance of the study of medical anthropology, its insight on Illness and diseases are different things (*Ibid*). Further, one expert from UCL expressed about medical anthropology as very important to India. Because there are increasing inequality, huge gap between Doctors and patients and those are in the mental health sector are removed from the culture of rural India — the values, the language, what makes them ill, etc. He says that though there are a few places in India where medical anthropology is taught, in the field of mental health there is hardly any communication between mental health and anthropology. The Indian subcontinent has myriad social stigmas-caste, gender, race, religion, etc. that are included in these studies.[9]

2.1. Medical Anthropology and its marginality

The discussion on marginal status of medical anthropology, particularly as articulated in Arthur Kleinman's *Writing at the Margin*.[10] Kleinman examines medical anthropology's position on the periphery of both medicine and anthropology, emphasizing how this marginality reflects its broader challenges and opportunities. Kleinman positions medical anthropology at the intersection of medicine and anthropology, metaphorically describing it as being on the "margin" of both disciplines. The "margin" does not imply irrelevance but suggests a unique vantage point to examine cultural, political, and phenomenological dimensions of health and illness. The author critiques psychiatry's dismissal of cultural factors in mental health, particularly in the Western biomedical framework. Psychiatry often focuses on biological and organic causes of mental illness while sidelining cultural and social dimensions.

2.2. Marginalization of Anthropology

Psychiatry in Western contexts has historically regarded cross-cultural research as exotic or marginal, prioritizing Euro-American frameworks and biological explanations. Kleinman challenges psychiatry's exclusion of cultural apparatuses — language, symbols, and social norms — from its analysis of mental illnesses. He questions why cross-cultural findings, especially from non-Western societies, are often ignored when developing universal psychiatric diagnostic systems. The dominance of biological explanations in psychiatry during the 1980s, which aligned with advancements in neuroscience and psychoactive medicines which had overshadowed the contributions of cultural and social sciences.[8,10]

Kleinman advocates for the integration of anthropological perspectives into psychiatry. He

highlights how cross-cultural research can enrich understanding of mental health, providing insights into the diverse ways communities experience, interpret, and treat mental illnesses. The absence of indigenous and tribal communities in national mental health surveys, such as the National Mental Health Survey.[11] This omission underscores the marginalization of certain populations in psychiatric research and policy-making.

Kleinman's *Rethinking Psychiatry* addresses seven key questions in his work, ranging from the nature of psychiatric diagnoses to the role of culture in shaping mental illness and its treatment. These questions probe the relationship between psychiatry and social sciences, challenging psychiatrists to engage with anthropological insights. Anthropological inquiry is presented as a tool to critique and analyze psychiatric institutions, their training systems, and the broader paradigms that govern mental health sciences. This analysis highlights the cultural dimensions of psychiatry itself, exposing its assumptions and limitations. Despite some progress, the marginalization of anthropology in psychiatry persists. Kleinman's experiences as a student and professor, spanning decades, illustrate the enduring challenges faced by medical anthropology in gaining recognition within medical sciences.[7,8,10]

The Writing at Margin[10] indicates the position of Medical anthropology, neither in anthropology nor in medicine, is on the *margin* of both sciences. Here he elaborates "*margin*" as metaphoric phrase expresses "… medical anthropology is at the margin of medicine; it is also at the margin of anthropology"… Writing at Margin explores those differences which differ… in texture from the main body… i.e. such differences are in medicine's culture, political and phenomenological texture" (p-1). Further it warns to this phrase does not mean…. "conditions which closely approximate to the limits below or beyond which something ceases to be possible or desirable" and adding more, it does not necessarily to be marginal in the sense of having nearly passed the limit of variability or relevance.[3]

Anthropology has been marginal for the psychiatrists; particularly for those who are in authority; and for them cross cultural research is nothing more than exotic. Adding further it is believed that "*concept of Culture*" as treated most in such books related to psychiatry, as un-desirable /unessential to mental illness and their psychiatric treatment. The meaning of biological and psychological sciences, social norms, cultural aspects do not required *much* in the mental health issues… the entire "*Cultural Apparatus"* of languages, symbols and its interpretations are least concerned or much ambivalent in nature. The cultural issues are elementary or least relevant for these mental health professionals-psychiatrists. Their significance, of cultural apparatus, is placed at the bottom to all potential contributory factors. In prevailing circumstances mental illness have been shown their associations closely to biological causes/organic causes, all mental disorders are due to latter imbalance in brain chemical secretions. Most of these clinicians are deaf to the whole cultural apparatus.[8] Here at this juncture it has been put forth the basic pertinent questions to western-oriented psychiatry, why this discipline, psychiatry, regarded the cross-cultural research of 80% non-western societies as marginal? Why cannot results of these researches in non-western societies be utilized in establishing the universalities of the nosology for the symptoms of mental sickness or illnesses? Is this discipline limited to standards of European or American white class people's psychiatry or its sciences of mental health? (p.xii). Kleinman had expressed his own experience, as Professor of Medical Anthropology and Psychiatry, he says first as student in Standford University in 1962… "*greeted with stony ambivalence"* and later as teacher in 1987 in Harvard School of Medical Sciences the situation is same and in the quarter century nothing has changed-undesirable, unessential still prevail.[8,12]

Marginal status to anthropology or other social sciences, prejudices from medical professions, lack of resources, an appropriate audiences are fear of sources of harmful bias during 1990. But situation are now changing, most of medical social sciences contributing to the long term commitment to field and specifically maintained their autonomy of social sciences gaze or autonomy of anthropological lenses.[8] Anthropological inquiry has examined the utilities of cross-cultural research in non-western communities for the mental health issues and their interpretations in psychiatry. Cannot such anthropological inquiries and their interpretations be the part of teaching about mental health issues for a

better understanding of such diseases in local frame of reference? We feel further the local interactions dynamics of the person in this frame-which we call it as local flux in later part of the paper, where one is placed to grow and interact with others must be analyzed for the triggering factors for mental health issues or other such human conditions. It has been advocated for an anthropological inquiry of these diseases which must be central to psychiatric research and teaching (Ibid). National Mental Health Survey[11] held during 2014 which was purely based on cities and lacking the data on mental health issues in tribal communities or indigenous/ethnic people have been living in isolation in their own microcosm. Do not they have mental health issues? Perhaps they do have, but their representation should have been the part of the survey in the country.[13]

The phrase, why anthropology, is from the Prologue of the book[1] begins with the reasons of the anthropological sciences and its relevance of cross cultural research particularly in understanding the mental illnesses.[8] The seven questions are: What is psychiatric diagnosis? Do psychiatric disorders differ in different cultures? Some Methodological questions: Do psychiatric disorders differ in different cultures?: The Results of findings. Do social relations and cultural meanings contribute to onset or course of mental illness? How professional values do influences the work of psychiatrists? How do psychiatrists heal? And finally, last question, what relationship should psychiatrist have to social sciences, particularly to Anthropology? The entire book answers these seven questions as seven chapters.

The biological explanations begin to dominate as main reasons for the behavioral aberrations which mainly linked to then recent discoveries and development of psychoactive medicines in physiological effects and basic neurosciences during 1980. This period attributed as *"golden period"* in advancement of treatment of these behavioral aberrations which had reversed the entire discourse in psychiatry and its medicines linked all aberrations to pathological underpinnings. This association had altered all psychodynamics, behavior and community orientations into a single motto… return to our medical roots… maintained Kleinman.[8] This development transformed all behavioral disorders into impressive research diagnostics criteria, standardization of clinical assessment and its instrument yield high reliability rates and American Psychiatry Association official diagnostics system has huge impact in worldwide profession of Psychiatry. If mental health sciences or psychiatry…is placed in central of the mirrors of cross-cultural researches from indigenous communities for various mental illness, their therapeutics experiences of healings then these mirrors exposes psychiatry's central presumptions and paradigms of cross-cultural comparison. The anthropological inquiry reveals further the cultural analysis of psychiatric institutions, its trainings/ teachings systems and part and parcel of knowledge (*Ibid*).

Mental health sciences, particularly psychiatry and linking to the perspective of Arthur Kleinman[8,12] who had raised basic *seven* questions to psychiatrists, we put forth his perspective for the *last* question could have its answer. If one see the historical development in background the bio-psycho-social approach emerged in medicine and other medical professionals mainly among the psychiatrists other primary health care personnel (p-142). After canvassing about sociology and psychology in mental health, it is emphasized on anthropology, its research analysis challenged common sense understanding, unearth the value conflicts and other hidden aspects of social life assigning the changing sociopolitical contexts of behaviors in historical perspectives. Then anthropologists always suspect and don't accept the paradigm of psychiatrists as authentic account (p.145). Further *then* why social sciences are on margin or as marginal to bio-medicine? It is because of their very different paradigm of practice and develops a significant paradigm place in medicine; they need a transfor-mation of the paradigm of practice of medicine (Ibid). But such transformation, social sciences in these schools had already begun during 1990s or earlier in our country.

Behavioral medicine in medical research and teachings, personnel experiences, social relationships and cultural meaning have yet not legitimate part (p.146; Kleinman).[12] There are several barriers for the social scientists with effective relationship with medicine. Many of them do not have acquired the specific training/teaching or know how to teach or research their subjects; some of post-doctoral students have begun to offer such advance education.

Unfortunately there is no record available to review on such aspects. Often physicians hold a negative image about them, social scientists, including anthropologists; and vice-versa, latter holds same image too. Medical anthropology see a reverse ethnocentrisms and romanticism in folk healers as heterogeneous and beneficent whereas biomedical practitioners as homogeneous and maleficent. Similarly medical sociologists are in anti-psychiatry persuasions (p.146).

3. Medical Anthropology and Psychiatry

A model on the relationship between medical anthropology and medicine was proposed. Most of the physicians were encouraged to go to for newly established centers of excellence in biological sciences for basic trainings in research and teaching methods beneficial and relevant medicine. Through such efforts medicine as profession had transformed into *biomedical sciences* based on which comprised three sources of knowledge-biological sciences, clinical sciences and social sciences. Such efforts must be sustained systematically for the further benefit this relationship in following three ways. One, establish and develop appropriate few centers of excellence where major social sciences research and educational project in health related subjects. Two, they must be monitored for the literature on concepts and methods may be useful in translating practical professional model, research measures and clinical techniques. And last, to involve an easy introductory knowledge of reviews of relevant social sciences theories and findings or results into the education of general physicians. These model frames must be clubbed with clinical teachings to educate as critical auditor and contributor to the issues of health policy must be formulated in language of social sciences than in the language of biomedical sciences. Kleinman narrow down this broad social sciences approach by exemplifying a relationship of medical anthropology with psychiatry, last question which he has answered in the last chapter.[8,14]

There basic questions probing this relationship-how can anthropology contribute to the training of psychiatrists and his clinical practices of journeyman practitioners? Why should the busy psychiatry residents, already busy in core of psychiatry and his emersion in clinical experiences or as working professionals: why should either pay serious attention to anthropology? And what make serviceable anthropology to the clinicians? Kleinman[8] answers these through a long experiences in teaching psychiatry with anthropology or anthropology with psychiatry to psychiatry residents and other junior fellows about basic science seminars on "*Psychiatric Anthropology*" lectures on the anthropological aspects of pathology and treatments, supervised clinical work in consultation-Liaison psychiatry, cross-cultural, cross-ethnic community settings and psychotherapy (p.147-148). There is no single answer to these questions rather it depends upon-how do you use anthropological resources in your psychiatric teachings, training and other specific programme aimed to train the psychiatry residents. Some of the uses could be: ethnographic data/ information of medical anthropology; application of anthropological methods in clinical setting; place basic medical anthropological concepts and perspective in psychiatric teaching /training; anthropological model of illness-assessment of illness and its meanings

3.1. Medical Anthropology Teaching Program

Medical anthropology has tremendous potential to enrich the different aspects of mental health sciences and mental health per se. A model teaching programme could begin at different level of academic advancement of teaching particularly the psychiatry teachings which could be: Introductory, intermediate, advance, special situation of teaching and anthropology for the practicing psychiatrists (p.153).

Medical Anthropology teaching in introductory programme, it may cover with a synoptic anthropological concept through short CME, a didactic course to first year residents. These students must be placed in a real field work situations for at least two weeks after OPD hours under a supervision of the faculty of both disciplines-Anthropology and Psychiatry. Often anthropology students are trained particularly for such kind of field works for various field-work sites. These Others could be ethnic or religious groups, displaced people, patients in family setting or in community setting – to explore the social networking for better mental health. Then its tool-kit, how data would be gathered or collected through field work form the targeted people. Gender sensitive topics for field work-issues of health and hygiene during menstruation among young girls, where a

woman student can probe better. We recall that one MPH student working on Folk dentists and their issues. He was initially trained to elicit the information from both, folk dentist and their customers. But he shared later that data is missing with women patients about their dental issues. He shared an unpleasant event had happened while eliciting information from a woman patient with her dental issues on the road side-folk dentist clinics and had shared in his dissertation writing it to defend the why there is no such data. These are gender issues in the field work. One of us recall his own field work, as ICMR Research fellow working in pediatric ward of Safadarjung hospital in Delhi where he had interviewed new mothers, who have delivered a malformed babies in last 24 hours along with a young lady research fellow meant for the desired purpose for the a project in 1988. Short duration classes on the preparation of tool-kit for the desired field work-how to prepare schedule, questioner, field work diaries writing-what you did, how the information was elicited-participatory, non-participatory approach etc. must be a compulsory part to a resident or trainee.

This, as we mentioned above, is beyond the clinical OPD or in hospital setting, is also important for better patients care, besides their daily routine work in clinical setting. They must be oriented to their cultural values, prevailing behavioral practices, and norms, family, marriage and kinship systems-embedded meanings etc. all collectively influence their sickness or normal behaviors. Let them be trained for the sites based field work-for mental health needs or related issues for eliciting local social system in recent past, major event occurred in the lives of people or patients and their impacts on them. Questions to review the normal course of their lives-child birth/rearing pattern, schooling ways, careers, future vision, and marital patterns to old age/aging behaviors. It will all enrich these psychiatry residents perspective for the people as well as for patients and finally enhance clinical relevance in patients care.[8]

Main issue is to introduce the core-cultural values/issues or create sensitivity for local-social ecology in ethnic groups or in a community. Such issues then may be examined or seen or linked to changing political and economic contexts of emerging illnesses, its prevailing practices of State resources for social issues. They may be provided a compendium on the anthropological reading materials to critically analysis the mental health policy literatures on specific resources of State/country. In brief the neophytes must be oriented to family issues, belief systems and adopted modalities for the treatment of illness may be effective part of introductory programme for teaching medical anthropology.

Session of training or teaching medical anthropology to middle level psychiatric, psychiatric social work, and clinical psychology trainees in clinical setting could be held in small groups during intermediate level of teaching program of medical anthropology. It could be better taught effectively, after introductory programme, in clinical setting in context of patients care. If cases of persistent chronic pain examined in OPD, then such pain cases must be examined for ethnic influences on the experiences its expressions of this pain through evaluation or treating ethnic patients with pain. This chronicity of pain, if being evaluating for the cultural influences responding to pain influences symptoms amplification-e.g. dramatic expression of distress, anxiety over latent meaning of symptoms, low threshold of pan and acceptance of and response to a particularly treatment – psychotherapy, surgery, or acceptance… etc.[15-17] These psychiatric ethnographic studies of illness, belief and behavior of a particular group of complain better be examined in and appropriately evaluated for ethnic influences on the illness or chronic pain. Often seen the psychiatrists are insensitive to these ethnographic information, as they think, create problems in clinical other communication aspects. Though such ethnic and cross-cultural pattern of help seeking behavior, alternatives treatment or therapies by local healers sometime may be effective, but such approaches delay the appropriate treatment-psychiatric treatment, non-compliance and dissatisfactions defect the comprehensive care. Relevant anthropological knowledge can help to avoid problems for the clinicians/psychiatrists (p.154). Relevant anthropological knowledge could be help during clinical case rounds, clinical consultations, special clinic or ward conference on difficult diagnosis.[18,19] Furthermore such information can be used for large cultural issues- somatization of mental illness, idioms of stress, normal trans/possession states/altered state of consciousness (ASC), Cultural

bound syndromes, which have been unbound in DSM-5, and routine culturally based conflicts in clinical care.

Mini-Ethnography (Mini-E) is an important aspect of clinical trajectory of an illness-entire discourse of the onset of illness, how it emerged, when it begins and what it is now? It should be as precise as possible illuminating illness and complete trajectory of all major events responsible or triggering factors of the patient's illness. It helps the clinicians in understanding its discourse with patients-involving family dynamics, stress as narrated by family members as main care providers.

After Mini-E, an Explanatory model of Illness (EMI) is also eliciting method of information in detail from the family of the patients and others extended kinship support system. It must be taught to trainees/ residents and students through a co-joint supervision of a psychiatrist and anthropologist. Here they must acquire the basic skills in eliciting the possible information on explanations about the illness-culturally conceptualized affecting patients and his family perceptions of symptoms and communication of distress and coping strategies responses. EMI involves basic questions in the family: why me? Why it has happened to me now? What is the wrong? When will it last or cure? What are the possible issues or problems it has created in the family? It all, together will generate a construction of the patients and family cultural model of explanations about prevailing psychiatric illness-patients may believe a victims of sorcery, witchcraft, disobedience of taboos etc. (p.156). Teaching sessions for the residents may be organized in clinical setting to assess family or work problems, available social support, social network available through State agencies. These skills are not only for psychiatry trainees but can be useful to clinical psychology, psychiatric social work students and other mental health professionals too. Besides they must be taught to others medical students and primary health care providers or physicians for mental health care issues.[20]

Anthropological orientations programme should be a part of their regular teaching/training in a community based project or ongoing research programes useful in acquiring the skills of Mini-E and EMI for better psychiatric practices. Community based field-work orientation, for which anthropologists are normally trained, to new trainees must be involved to understand the social ecology at the local level conjointly under the supervision of anthropologist and psychiatrist. This co-joint supervision very necessary as former should have knowledge with an exposure to clinical case experiences whereas latter must be knowledgeable about basic concepts of anthropology and its research methodology- conducting field-work, working with people and exposure to conducting qualitative field-work in the community: slums, refugee's camps, and migrant people. There are few psychiatrists trained for anthropology and few anthropologist trained in basic psychiatry in our country. Here trainees if exposed early to the social ecologies, then they will better understand cultural influences inducing an illness and can design better their treatment plan for patients care.

Further teaching and training Medical Anthropology for the advance and special situations may be continued after intermediate programme for only those who are interested in more cultural influences or similar interest to learn more about anthropology at an advance level. In such case, faculty conjointly-psychiatric or psychological anthropologists must design specific need based courses-such as child rearing, concept of father, mother, husband, wife,-role and responsibility, marriage, extra or pre-martial affairs, child abuse, suicides, alcoholism, adolescents anxiety disorders, schizophrenia, cultural aspects of psychotherapy or psychopharmacology and comparative healing systems/medical pluralism as prevalent in cross-cultural ethnic groups. Or alternatively these trainees can be placed for a short period as compulsory training, one to two weeks, in a medical anthropology or anthropology department for the appropriate orientation in psychiatric anthropology or anthropological psychiatry. Still more advance training or teaching programme in anthropological psychiatry as Master or Postdoctoral fellowship program focusing on the local mental health issues and their prevailing care system.

The teaching/training in special situations is very valuable for the mental health sciences and its professionals. These situations can be: working with migrant labor, refugees etc. as they have higher risk for illness and culturally induced problems for their health. Recent situations of Rohingyas, a Muslim minority ethnic refugee group, living in camps in

Delhi and other parts of the country, as we had short field work with them, and felt their lives are full of dark futures: crisis of identity, issues of school education, living space, settlements, etc. These are issues directly linked to policy of the State, police Station, prevailing rules positions and international UN Convention about Refugees. This is one special situation where our trainees/residents should be placed through a voluntary organization/NGO to explore a local life and its social-ecologies. we believe they will assess their own cultural perceptions and experiences and effects on their clinical practices.[21-24]

One of us, second, recalls his own field-work with Bangladeshi migrant resettled on Yamuna-Pushta in Delhi where he provided training to police personnel in Juvenile Justice Administration, JJ Act-2000 then newly being implemented through collaboration with Police Training College, Delhi during 2001 to 2005. Then he learned along with these police trainees more about their lives-alcohol, drugs, more of difficult circumstances for women and children in these five years. Navjyoti Police Foundation, a voluntary organsaition working for children education programme, gali-schools, and drug de-addiction program in Sarai Rohila Police Station etc. One of us, second author, used to sensitize 40 police officers for a week on these issues of children in difficult circumstances and trained more than 4000 Delhi polices officers by end of 2005. Later on many of these police officers were posted or become in-change of Special Juvenile Police Unit in their police station.

Anthropology can help the trainees to conceptualize the problems in cross-cultural patient care and thereby generalize from those cases to the categories their problems of patient care. The engagement with anthropology can help trainees to liberate neophyte clinicians from professional biases. It is good for those trainees who are interested in global psychiatry or international psychiatry should learn to be informed users of anthropological concepts and findings. Anthropology is increasingly being called on to address the major international health issues and other emergent health conditions (p.159).

Last, Anthropology for the practicing Psychiatrists who often face conformations and challenges to their clinical practices/competence and may feel demoralized, impacting their practice of patient care-a burn out state. Medical pluralism or comparative analysis healing system together with its practical frame work of healing system could be valuable to a budding psychiatrist. This analysis, which medical anthropologists often do, can provide the critical approach of methods to access the claims and approaches of new therapeutics movements to routine evaluation as reform his own practices as life-time craft. In the similar way, Anthropological methodology to audit and interpret patient's story, Mini-E and EMI, would be useful to them as a disciplined approach to assessment of illness experiences and life history of patients. This clinical methodology must be included in medical anthropology.[10]

There are three meaning of chronic illness in the lives of patients. Ethnographic accounts of chronic illness may also contribute to understand social discourse of patient lives and experiences shape present state. It can help the clinicians for psychodynamics formulation and its significance. Illness can change the context, context can change the illness. Often this context is left behind in psychiatric interpretation of illness experiences. First hand ethnographic account on the illness experiences can be useful and can enrich psychiatric assessment and enhance treatment. Finally, the patients explicit explanatory model help clinicians for better psychosocial assessment-through new skills for elicitation and negotiations of explanatory models-Mini-E and EMI (p-161). We are elaborating the linkages of medical anthropology with allied mental health sciences in the following section.

4. Medical Anthropology with other Mental Health Sciences

Medical anthropology plays a major role in enriching the understanding of mental health sciences by integrating cultural, social, and behavioral perspectives into therapeutic practices. Its emphasis on the human experience and socio-cultural contexts complements fields like psychiatric social work, clinical psychology, physiotherapy, occupational therapy, and yoga sciences. This interdisciplinary collaboration can enhance patient-centered care, ensuring that mental health interventions are both effective and culturally sensitive. Medical anthropology focus on the understanding of human

experience of illness and health systems which provides a unique perspective that complements mental health sciences. By integrating cultural and social factors into the understanding of mental health, medical anthropology plays a vital role in developing holistic and person-centered treatment approaches as follows:

1. Medical Anthropology and Psychiatric Social Work

Psychiatric social work focuses on addressing the social and environmental determinants of mental health disorders, such as family dynamics, poverty, or stigma. Kleinman's work discusses how cultural and social frameworks shape psychiatric practices and mental health perceptions.[10] Medical anthropology contributes significantly to psychiatric social work through understanding cultural context. Medical anthropologists study cultural beliefs about mental illness, which is essential for designing culturally sensitive interventions. It can address stigmare search in medical anthropology highlights cultural norms influence the stigma around mental illness, helping psychiatric social workers to develop targeted awareness programs. The community engagement emphasize the role of community-based mental health programs, drawing on anthropological insights into local healing practices and social support networks.

2. Medical Anthropology and Clinical Psychology

Clinical psychology focuses on understanding, diagnosing, and treating mental health disorders, often using psychological theories and evidence-based practices. Good and Good[25] explored that how clinical psychology and anthropology intersect in understanding the lived experience of mental health. Medical anthropology complements clinical psychology through exploring cultural interpretations of mental disorders. Anthropologists examine how different societies conceptualize mental illness, which can guide culturally appropriate diagnosis and treatment. Addressing culturally bound syndromes wherein medical anthropology investigates syndromes unique to specific cultures (e.g., Dhat syndrome in South Asia), aiding clinical psychologists in accurate diagnosis and ethnographic methods in therapy where anthropological fieldwork methods, such as in-depth interviews, can enhance therapeutic practices by emphasizing patient narratives and lived experiences.

3. Medical Anthropology and Physiotherapy

Physiotherapy focuses on physical rehabilitation, often addressing neurological or psychosomatic conditions that intersect with mental health. Csordas[26] explores how cultural and spiritual beliefs influence the perception of physical and mental well-being, relevant to physiotherapy. Medical anthropology enhances physiotherapy through its understanding of patient behavior. Anthropological research helps physiotherapists understand why patients may resist or adhere to treatment protocols based on cultural beliefs. Psychosocial aspects of pain and recovery may reveal the effect of social factors, such as family dynamics or economic pressures, affect a patient's rehabilitation journey. Cross-cultural pain management can enhance the insights from medical anthropology to help physiotherapists by incorporate culturally appropriate approaches to pain perception and management.

4. Medical Anthropology and Occupational Therapy

Mattingly and Lawlor[27] have reported that how narrative and cultural understanding improve therapeutic outcomes, aligning with anthropological methods. Occupational therapy addresses the physical, psychological, and social barriers that prevent individuals from participating fully in daily life. Medical anthropology complements this field by (i) Understanding social determinants of occupational health: Anthropologists investigate how cultural and economic factors influence occupational health, such as workplace stress or lifestyle diseases. (ii) Adapting interventions to cultural norms: Occupational therapy practices can benefit from anthropological insights into culturally appropriate therapeutic tools and strategies. (iii) Holistic patient care may incorporate anthropological perspectives; occupational therapists can better address the emotional and cultural needs of patients recovering from trauma or disability.

5. Medical Anthropology and Yoga Sciences

Yoga sciences focus on the integration of mind and body through practices that enhance physical,

mental, and spiritual well-being. Alter (2004) explores the cultural and scientific dimensions of yoga, highlighting its relevance to mental and physical health. Medical anthropology provides a unique lens to understand the socio-cultural significance of yoga and its impact on mental health by (i) Cultural appropriation and globalization of yoga : Anthropologists explore how yoga, originating in India, has been adapted and commodified globally, often losing its cultural essence. (ii) Traditional healing and modern psychology: Yoga practices often intersect with mental health therapies. Anthropological insights help bridge the gap between traditional and modern therapeutic approaches and (iii) Understanding spiritual healing: Anthropologists examine how yoga and meditation address emotional and psychological trauma, often serving as complementary treatments for mental health disorders.

There has been a shift from the traditional biomedical to bio-psycho-social modal of health care. It represents a major evolution in understanding and managing health and illness. The biomedical model focuses solely on biological factors, viewing health as the absence of disease, while the bio-psychosocial model integrates biological, psychological, and social dimensions. This more holistic perspective acknowledges that mental and social factors, such as stress, relationships, and environment, significantly contribute to a person's overall well-being. This shift highlights the interconnectedness of mind and body, emphasizing the need for interdisciplinary care that includes psychological expertise to treat patients comprehensively. Therefore, psychology plays a pivotal role in promoting overall health, preventing illness, and aiding in recovery by addressing the complex interplay of biological, psychological, and social factors.

The Psychiatric Social Work and Clinical Psychologist, as a behavioral health discipline, are integral to this model because it explores how thoughts, emotions, behaviours, and social contexts impact both health and illness. Psycho-social interventions can improve health outcomes by addressing mental health issues, promoting healthy behaviours, and supporting individuals in coping with chronic conditions. For instance, the management of chronic diseases like diabetes or hypertension requires not only medical treatment but also psychological support for behaviour change, stress management, and emotional well-being. In the context of the COVID-19 pandemic, psychosocial interventions played a vital role in Psychosocial Rehabilitation (PSR) and became a boon for individuals experiencing mental illness or psychological distress during a pandemic time.[28] The pandemic exacerbated existing mental health conditions due to isolation, fear, economic stress, and disruption of routine life, making the role of PSR services essential in promoting recovery and well-being. Talwar and Singh[29] have significantly narrated the importance of the allied health professions i.e. psychiatric social work, clinical psychology and medical anthropology are rendering their services in various health care & research institutes.

In India, many mental health care institutions are providing higher education in mental health and any person who has a postgraduate degree in Social work/Sociology or Psychology are eligible for the M.Phil. or Ph.D. in Psychiatric Social Work & Clinical Psychology. Recently it has been approved that those students who have passed their master degree in distance are also eligible to apply in these courses. There are limited seats as these are residential programs. In India, various mental health institutes are running academic research programs for M.Phil. and PSW. Some of them are as: in Agartala- G.B. Pant Hospital; Assam - L.G.B. Regional Institute of Mental Health, Tezpur; Delhi- Institute of Human Behaviour and Allied Science (IHBAS) and Atal Bihari Bajpayee Institute of Medical Sciences & Dr. RML Hospital, New Delhi; Jharkhand - Ranchi Institute of Neuro-Psychiatry and Allied Sciences (RINPAS) and Central Institute of Psychiatry (CIP), Ranchi; Maharashtra - Maharashtra Institute of Mental Health, Pune; Regional Mental Health Hospital, Yerwada, Pune; Madhya Pradesh - Gwalior Mansik Arogyashala, Gwalior, Mental Hospital, Indore; Goa - Institute of Psychiatry and Human Behaviour; Gujarat - Rashtriya Raksha University, Gujarat and Hospital for Mental Health, Jamnagar, Gujarat; - Karantaka - NIHMANS, Banglore; Punjab - Institute of Mental Health, Amritsar; Rajasthan - Psychiatric Centre, Jaipur; Orissa -Mental Health Hospital, SCB Medical College, Cuttack, Thiruvananthapuram - Mental Health Centre, Visakhapatnam - Hospital for Mental Care, Uttar Pradesh - Institute of Mental Health & Hospital, Agra and Mental Hospital,

Varanasi; and West Bengal - Institute of Psychiatry, Kolkata.[29]

Here one may be interested to know - what is conceivable contribution can medical anthropology make in psychiatry or other mental health sciences? Then here medical anthropology have moved from its central core values-study small scale communities etc. to its margins: to study the developing the and post industrialized nations for their major issues of agriculture, major health issues, social development, problems of ethnic/cultural violence, problems of refugees or migrants etc. as the major concern of the developing countries. Hence anthropology can contribute and effectively address these latter issues, besides understanding their local social ecologies.

Now we sum up mental health sciences and its challenges to medical anthropology in 21st century. These mental health sciences issues are concerned to cultural understanding of people, so it connects to anthropological theories for a wider conceptual frame of understanding of "Other people", non-western, tribes, indigenous, native people for the mental health concerns. Therefore anthropology of mental health, illness and a broad spectrum mental health sciences or psychiatry are major areas of medical anthropology and have become now very relevant to mental health sciences with great importance to the anthropologists.[10] Medical anthropological perspectives may enrich the understanding of phenomena usually explored by other disciplines.[30-34] The convergence between anthropology and psychiatry remains a fertile ground for generating ideas and issues with the potential to stimulate both disciplines particularly in theory and clinical practice[5] and challenges of teaching clinical medical anthropology experiences in our country.[24,35]

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Original Article

Mental Health Problems among Women Living with Domestic Violence

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ABSTRACT

Background: *Domestic Violence or Domestic Abuse can be described as a pattern of behaviour in a relationship that has a motive of obtaining and continuing power and control over the other. One of the major public health concerns and an extremely common violation of women's human rights is Domestic Violence. The World Health Organization published an estimate that indicated that 1 in 3 (30%) of women worldwide has been a victim to either physical and/or sexual violence by an intimate partner or someone else in their life.* ***Aim:*** *The aim of the current study is to assess the percentage of women suffering with common mental health problems (anxiety, depression, OCD and dissociative disorders) that have experienced Domestic Violence.* ***Methodology:*** *The study consisted of total 150 participants, with a cross sectional study under ex-post facto research. The tools used for the study was: Beck Anxiety Inventory, Beck Depression Inventory and dissociative experiences.* ***Results:*** *It has been found that almost 38% women suffered from anxiety, 32 suffered from depression, 36 suffer from anxiety and depression, 10 from OCD and 34 from dissociative disorder.* ***Discussion:*** *Domestic Violence is a serious issue in India, affecting a significant proportion of women in the country and lead to many mental health problems. Hence, a significant intervention might be planned for a better management plan.*

Keywords: *Domestic Violence, Mental health, Women, Intimate Partner Violence, Depression, Anxiety.*

Introduction

Domestic Violence is a serious issue in India and it affects significant number of people, particularly in women.Domestic Violence or Domestic Abuse can be described as a pattern of behaviour is a relationship that has a motive of obtaining and continuing power and control over the other. According to National Family Health Survey (NFHS-5) conducted in 2019-20, about 30% of ever - married women in India have experienced physical, sexual or emotional violence by their current or former husbands. However, experts believe that this figure may be an underestimate, as many cases of domestic violence go unreported. In 2022, The National Commission for Women registered 6,900 complaints in the 'protection of women against domestic violence' classification[1]. Various data and researches conducted during the lockdown of COVID, also show that there was a elevation in the number of complaints made to the National Commission for Women. The number of complaints increased by over 30% during the pandemic phase alone.[1]

Domestic Violence in India takes many forms, including physical abuse, emotional abuse, sexual abuse, and economic abuse. It can be perpetrated by spouses, in-laws, and other family members. The reason behind are complex and can vary from one case to another, but some common factors include gender inequality, traditional beliefs about the role of women, poverty, alcohol abuse. Heron et al[2]

identified three themes that why women stayed in abusive relationships. First one was that of Investment, it contained sub themes of marriage, children and/or pregnancy and keeping the family together. The second was that of 'Entrapment', the sub themes were of Financial or Economic Dependence, Societal/Cultural/Religious beliefs, Physical Entrapment, Isolation from Social Settings and Learned Helplessness. The third theme was that of Love. The woman believed they couldn't have left due to the feelings of 'love' and the bond.

There is a lot of research-based evidence that shows that Domestic Violence against Women has a major negative impact on Mental Health and that it results in an increase in their usage of various health services.[3] A paper by Oram[4] reviewed violence against women as a violation of human rights and a public health problem. The most common form of violence against women is Domestic Violence, Sexual Violence, and Victimization. These were associated with an increased risk of mental disorders. An article by Niaz and Hassan[5] reviewed the impact of Cultural Factors of the Mental Health of South Asian Women. Gender discrimination has resulted in a Second Class Status of Women in the Society. Women's self-esteem, self-image, mobility and work depend upon the male members of the patriarchal society. The lack of empowerment in the women for emotional and financial dependence has impacted and restricted their self-expression and decision making. All of this with a combination of pressures (work, social and family) has a major impact on women's mental health.

It is found that the psychological issues of women Psychological Issues of Women like Obsessive Compulsive Disorder and Anxiety can be attributed to the unpleasant experiences of family violence. And, OCD and Anxiety can also increase the incompatibility in women and make them more vulnerable to Domestic Violence.[6]

This study is an attempt to understand the mental health state of the women who experienced domestic violence and to identify the common mental health problems faced by them as it is found in many of the studies that domestic violence affects the mental health of the women. It will be useful to assess common mental health disorders, because assessing it may help us in planning of effective management and empowering women.

Objectives

To find out the percentage of women suffering with common mental health problems (anxiety, depression and dissociative disorders) those have experienced Domestic Violence.

Material and Methods

Initially around 400 women, reporting to Clinical Psychology OPD for Therapy with the diagnosis of either Anxiety, Depression, Mixed Anxiety Depression, OCD and Dissociative disorders, were screened for the study and 250 were excluded on the basis of exclusion criteria. The study consists of total 150 participants, with age range of 18-60 years. The major inclusion criteria was the history of Domestic Violence.Women with the absence of history of domestic violence and presence of any severe psychiatric/ neurological illness, psychoactive substance abuse, with diagnosis of Intellectual Disability were excluded. The design of the study was kept as cross-sectional study under ex-post facto research. Informed consent was taken from the participants and a self structured proforma was used to collect the sociodemographic details. Tools used for the study was: Semi-structured Interview for screening and getting details of the experience of Domestic Violence, Beck Anxiety Inventory, Beck Depression Inventory and Dissociative Experiences Scale.

Results

Demographic profile of the participants

The majority of the participants of our study were in the age group of 29-38 years of 62 women, followed by in the age group of 18-28 years of 46 women, then 39-48 years of 34 women and the least in the group of 49-58 years of 8 women. Demographic Profiles are shown in Table 1.

Table-1: Showing the demographic profile of the patients

Age Group	No of Participants	Percentage
18-28	46	30.67%
29-38	62	41.34%
39-48	34	22.67%
49-58	8	5.34%

Common Mental Problems in Women Suffering from Domestic Violence

It has been found that almost 38% women

suffered from anxiety, 32 suffered from depression, 36 suffer from anxiety and depression, 10 from OCD and 34 from dissociative. Table 2 shown the mental health problems in women suffer from domestic violence and table 3 has shown the severity of anxiety and depression.

Table-2: Showing the anxiety, depression, OCD and dissociative experiences in women suffering from Domestic Violence

Mental Health Problem	No of participants
Anxiety	38
Depression	32
Anxiety + Depression	36
OCD	10
Dissociative Disorders	34

Table-3: Showing the severity of anxiety and depression

Diagnosis	Severity	% of participants
Anxiety	Minimal	4
	Mild	16
	Moderate	60
	Severe	70
Depression	Minimal	12
	Mild	16
	Moderate	46
	Severe	76

Discussion

Domestic Violence is a serious issue in India, affecting a significant proportion of women in the country. It may lead to many mental health problems. An abusive and toxic relationship has been associated with a range of mental health problems, including, depression, post traumatic stress disorder, suicidal ideation, anxiety disorders, substance misuse and many more.[7,8]

The findings of the current study indicate that the almost 38% women suffering from domestic violence experience anxiety and 32 experience depression, with 36% experience anxiety and depression. It has also been stated that Intimate Partner Violence does have a strong impact on Anxiety Disorders at a population level.[9] It has positive relationship with depression and anxiety and has negative relationship with quality of life. It strongly affects the mental health and quality of life of abused women.[10] According to Giulia Ferrari et. al.[11] found that Depression and anxiety levels were high in the domestic violence survivors. Intimate Partner Violence is associated with the depression, anxiety, posttraumatic disorder (PTSD), and substance abuse in the general population.[12,13] In the current study, it is found that the level of anxiety and depression found in the considered sample is severe. Hegarty et. al.[14] also stated thatwomen who experienced multiple episodes of violence usually experience high level of distress and their coping skills worsen with time. Worsen coping skills and the significant stress may lead to the mechanism of dissociate. The psychological morbidity is high in this population indicative that trauma informed psychological support is needed.[15,16] This is a significant finding for clinicians, mainly generalists, who frequently miss the symptoms of PTSD in the situation of domestic violence. WHO also released his guidelines on intimate partner and sexual violence stating that the 'Health-care providers should ask about exposure to intimate partner violence when assessing conditions that may be caused or complicated by intimate partner violence' together with the symptoms of depression, anxiety, PTSD, sleep disorders, suicide, or self-harm so that a effective management may be made by including psychological intervention in the plan as well.

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Original Article

Breaking the Silence: Male Conversion Disorders and their Consultation Pathways

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ABSTRACT

Background*: Conversion Disorder develops as a result of emotional stress/conflict in the presence of series of environmental, biological and personal vulnerability factors in the context of current life situation. Dissociative disorders (DDs)/Conversion Disorder often present with sudden and embarrassing symptoms and may be difficult for the patient and care giver to understand initially, recognize need for help and reach for appropriate treatment timely thus many times end up being neglected. Reaching multiple sources of intervention like faith healers, alternative medicines can be the reason for such delay in diagnosis and initiation of appropriate treatment. There is paucity of research in literature on male conversion disorder.* ***Aim & Objective:*** *To study route of consultation pathways and their stressors in patients of male conversion disorder.* ***Methods:*** *54 males who presented in one year with conversion disorder in tertiary care centre in OPD/IPD/ Emergency were evaluated. Psychiatric evaluation was done on a structured proforma containing sociodemographic details. The patients were examined by history taking, examination, investigations to rule out organicity. Thereafter, Depression Anxiety Stress Scales (DASS-42) was administered. The patients were diagnosed according to ICD-10 and route/pathway was assessed before psychiatric consultation and their major stress/conflict were assessed.* ***Results:*** *Majority of patients seeks treatment from quack/faith healers (59.25 %) before coming to the psychiatrist. Treatment from allopathic doctors other than psychiatrist being second most common pathway (20.37%). Majority of patients belong to the age group of 19-25 years of age (72.22%); 37(68.51%) were students, 31 (57.4%) were in a relationship. Most common presentation seen was pseudoseizure (40.7%). Most common stressor identified was relationship issues 17(31.5%).* ***Conclusion:*** *In conversion disorder before coming to psychiatrist most of the patient first goes to quacks/faith healers. So, we need to improve awareness regarding mental health, reduce stigma, pathways to psychiatric consultation for conversion disorder to enhance early diagnosis & management. Conversion disorder is most common in young adults and students with most common clinical presentation being pseudoseizure.*

Keywords: *Male Conversion/Dissociation Consultation, Route, Stressors*

Introduction

Conversion Disorder develops as a result of emotional stress/conflict in the presence of series of environmental, biological and personal vulnerability factors in the context of current life situation. Till recent times it was called by the word hysteria' and was considered to be a female illness, however the concept has undergone a revolutionary change and males are also found to be affected, albeit in a lesser proportion, however, it is seen to be steadily increasing in this part of population[1].

Dissociative disorders (DDs) often present with

sudden and embarrassing symptoms and may be difficult for the patient and care giver to understand initially, recognize need for help and reach for appropriate treatment timely thus many times end up being neglected. Reaching multiple sources of intervention like faith healers, alternative medicines can be the reason for such delay in diagnosis and initiation of appropriate treatment. There is scarcity of literature on the pathways to care and barriers faced in treatment for Dissociative disorders in Indian population in spite of having frequent presentation in clinical services.[2]

The term 'conversion disorder' was coined by Sigmund Freud, who gave the hypothesis that the symptoms of conversion disorder echo the unconscious conflict occurring in the mind of the person. The word conversion refers to substitution of a repressed idea by a somatic complaint. Conversion disorder usually starts in early adulthood and generally follows a stress or precipitating factor. In International Classification of Diseases, 10th edition (ICD-10), conversion symptoms are classified as dissociative disorders.[3]

Conversion disorder is a partial or complete loss of normal integration between memories of the past. In mental health, dissociation/conversion is defined as an unconscious defense mechanism involving the segregation of any group of mental and behavior process from the rest of the person psychic activity. There are many risk factors for conversion disorder as well as a life event, stress, childhood trauma. Life events have been traditionally appraised as one type of stressor.[4]

Conversion disorder refers to mild and temporary symptoms which can be motor or sensory in nature involving anaesthesia or paresthesia, especially of extremities, abnormalities of movement, gait disturbance, weakness and paralysis, gross rhythmical tremors, choreiform movements, tics and jerks. Any sense modality may be involved. Reflexes remain normal. There might be associated primary and secondary gains which act as maintaining factors. The disorder is more common in adolescence than in childhood.[5]

Aims & Objectives

To study route of consultation pathways and their stressors in patients of male conversion disorder.

Inclusion criteria

Male patients diagnosed with conversion disorder as per ICD-10.

Age 18 & above of the patient.

Patients giving written consent for being part of the study.

Exclusion criteria

Patients having psychiatric illness other than conversion disorder.

Patients having medical/surgical/neurological co-morbidities.

Patients not giving written consent for being part of the study.

Materials and Methods

After taking permission from Scientific and Ethics committee of tertiary care centre and on the basis of inclusion and exclusion criteria, total 54 male patients with conversion disorder were included in the study. A written consent was obtained after explaining the study to the patients. Patients were given a Semi Structured Performa designed especially for the study. The subjects were examined by history taking, examination, investigations to rule out organicity. Thereafter, Depression Anxiety Stress Scales (DASS-42) and Presumptive stressful life events scale were administered. The patients were diagnosed according to ICD-10 and route/pathway was assessed before psychiatric consultation and their major stress/conflict were assessed.

Results (See Tables 1-3)

Discussion

In contrast to the demographic distributions reported in various studies, our research presents a unique focus. Bammidi et al[3] identified 19 male patients (38%) out of a sample of 50, whereas Chowdhary et al[4] reported a substantially lower proportion, with only 3 male patients (5%) out of 60. In the study by Anuradha et al,[1] an equal number of 20 male and 20 female patients were compared. Morsy et al[6] documented 28 male patients (43%) out of 149, while Mace et al[7] found that 16 male patients (21.91%) were included in their sample. Our study diverges notably from these precedents by exclusively focusing on male patients, a methodological distinction that underscores the scarcity of literature specifically addressing male conversion

Table-1: Sociodemographic variables

Variables		No. of Patients n=54	Percentage (%)
Age	Young adult (18-25)	39	72.2
	Adult (26-35)	12	22.2
	Middle age 36 & above	3	5.6
Education	Illiterate	1	1.9
	Upto Middle class	8	14.8
	Upto Higher secondary	26	48.1
	Graduate or above	19	35.2
Occupation	Student	37	68.5
	Employed	13	24.1
	Unemployed	4	7.4
Socioeconomic status	Lower-middle	14	25.9
	Middle	30	55.6
	Upper	10	18.5
Locality	Rural	41	75.9
	Urban	13	24.1
Family	Nuclear	19	35.2
	Joint	35	64.8
Marital Status/ Relationship	Single	18	33.3
	Married	5	9.3
	In a relationship	31	57.4

Table-2: Common presentation of symptoms and common stressors

Variables		No. of Patients n=54	Percentage (%)
Common presenting symptoms	Pseudoseizure	22	40.7
	Syncopal attack	6	11.1
	Hyperventilation 8	14.8	
	Paresis	3	5.6
	Diplopia	1	1.9
	Functional Aphonia	4	7.4
	Gastric Symptoms 7	13.0	
	Others	3	5.6
Common stressors	Relationship issues	17	31.5
	Academic pressure 10	18.5	
Inter Personal Relationship (IPR) with friends		8	14.8
	Family IPR	6	11.1
	Marital issues	3	5.6
	Occupation issues 3	5.6	
	No stressor identified	7	12.9

Table-3: Consultation/Treatment History of Male Conversion disorders.

Consultation/ Treatment History	No. of Patients n=54	Percent (%)
Quacks/ Faith Healers	32	59.25
Ayurvedic/ Homeopathic doctors	5	9.25
Allopathic doctors other than psychiatrist (physician/ pediatrician/ neurologist/ others)	11	20.37
Psychiatrist/ Mental Health Professional	6	11.11
Total	**54**	**100**

disorder. This singular approach renders our study a distinctive contribution to the field.

Our study reveals many key demographic and clinical patterns among patients. The predominant age group was 18-25 years, comprising 39 patients, which aligns with the findings of Bammidi et al[3], who identified a similar age group with 19 patients. In contrast, only three patients fell into the middle age category with highest being 45 years of age.

Educationally, the majority of patients had attained a higher secondary level of education (48.1%). This differs from Anuradha et al,[1] where most patients were postgraduates (30%), and the smallest group was illiterate (1.9%). Anuradha et al[1] also reported that the lowest education level was primary schooling, unlike our findings. This may because of most of the patients in Anuradha et al[1] was from urban setup.

Occupationally, 68.5% of patients were students, a figure similar to the 46% reported by Bammidi et al.[3] Our study's unemployment rate of 7.4% aligns with Bammidi et al[3], who also reported a lower unemployment rate of 6%.

Socioeconomic status in our study was predominantly middle class, at 55.6%, which mirrors the findings of Bammidi et al.[3] This contrasts with Bhushan et al (2023),[8] who reported a higher prevalence of patients from lower socioeconomic backgrounds (38.48%). This may be because majority of the patients (53.95%) in Bhushan et al. (2023)[8] were unemployed.

Geographically, 75.9% of our patients were from rural areas, similar to Chowdhury et al,[4] who reported 53.3% rural representation, and Bhushan et al,[8] who found 60.82%.

Family structure analysis revealed that 64.8% of patients came from joint families, whereas 35.2% were from nuclear families. This differs from Bhushan et al (2023),[8] who found a higher percentage of nuclear families (68.38%) may be due to difference in methodology.

In terms of marital status, 57.4% of our patients were in relationships, which is inconsistent with Anuradha et al,[1] where 50% of the males were single.

Regarding clinical presentations, pseudoseizures were the most common, occurring in 40.7% of patients. This finding is consistent with Morsy et al,[6] who identified impaired consciousness as a prevalent symptom among male patients, and with Bammidi et al,[3] who reported pseudoseizures as the most frequent symptom at 20%.

Diplopia was the least common symptom in our study, occurring in only 1.9% of patients. This contrasts with Bammidi et al (2021),[3] who found deafness and dystonia to be the least common symptoms (2%).

Our study identified relationship issues as the most common stressor, affecting 31.5% of patients. This differs from Bhushan et al,[8] where marital issues were the most frequent stressor, and from Anuradha et al,[1] where academic stress was the primary factor.

Marital and occupational issues were the least common stressors, each affecting 5.6% of patients. This is similar to Anuradha et al[1] who found marital conflicts to be the least common stressor.

Finally, the primary consultation pathway for our patients was through faith healers or quacks (59.25%), a finding that differs from Shakya et al[2], who reported that the first choice for help-seeking was general practitioners or neurologists (40.6%). In our study, consultations with allopathic practitioners were the second most common route (20.37%), followed by mental health professionals (11.11%).

These findings underscore the diversity in patient demographics and stressors and highlight the need for targeted interventions based on specific population characteristics and preferences for healthcare pathways.

Conclusion

In cases of conversion disorder, patients often first seek help from quacks or faith healers before consulting a psychiatrist. To improve early diagnosis and management, it is crucial to enhance awareness about mental health, reduce stigma, and provide clearer pathways to psychiatric care for conversion disorder. This condition predominantly affects young adults and students, with pseudoseizures being the most frequent clinical manifestation. Addressing these areas will facilitate more timely and effective intervention.

Limitations

The sample was collected from a single center, predominantly comprising individuals from rural areas.

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Original Article

Emotional Regulation, Attachment and Internet Addiction in Young Adults

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ABSTRACT

Background: *In last one decade there is significant increase in the internet use among young adults. Contemporary research studies have focused studying the excessive internet use and its impact on regulating emotions and attachment vis a vis excessive internet use due to poor attachments and emotional dysregulations. Therefore, present study aimed to assess association of internet use, emotional dysregulation and attachment styles among young adults in urban metro.* ***Aim:*** *present study aimed to assess association of internet addiction, attachment styles and emotional regulation among young adults.* ***Methods and Material****: The research design is a cross-sectional study conducted among young adults studying in colleges in urban metro (Pune). Multistage cluster random sampling method was used for the study to collect the data. Scales used to collect the data were Internet Addiction Test, Measures of Attachment Scale, Difficulties in Emotional Regulation Scale.* ***Results:*** *A total of 385 college students participated in the study, 45.9% were male and 54.8% were female. Internet addiction has a significant correlation with insecure attachment style ($p<0.01$) and emotional dysregulation ($p<0.01$) indicating that higher the internet use, higher the emotional dysregulation and difficulties in maintaining relationships.* ***Conclusion:*** *Young adults are excessively using Internet which has been impacting their emotional regulation skills as well as their close relationships. Internet works as a coping strategy to deal with their negative emotional experiences. Young adults are also seen to have insecure attachment style which impacts their close relationships and further promotes internet use to avoid their relationship difficulties.*

Keywords: *Internet Addiction, Attachment styles, Emotional Regulation, Young adults*

Introduction

Internet addiction is defined as the overuse of Internet leading to impairment of an individual's psychological state (both mental and emotional) as well as their scholastic, occupational and social interactions.[1] Kimberly Young, a clinical psychologist was first to publish a study regarding Internet Addiction in a clinical context. Young developed the Internet Addiction Test[2] to measure the severity of internet use and categorized Internet Addiction into five subtypes namely, online gaming, online gambling, online affairs, compulsive web surfing and cybersex-cyberporn. Internet is easily accessible and affordable to everyone and has become a necessity in our daily lives. The online culture promotes a sense of anonymity, accessibility of content at one's fingertips, and a plethora of options for the consumers. Internet has redefined the human relationships and how one perceives their self and society. A literature review on neurobiological component for Internet Addiction suggests that there are anatomical and functional changes, genetic polymorphisms and impairment of neurotransmitter systems have been found in brain of individuals with IA.[3]

Attachment theory was first proposed by John Bowlby and was further refined by Mary Ainsworth. Bowlby defined attachment as the most important relationship that children have with their caregivers

especially their mothers. Ainsworth identified three main attachment styles, secure attachment style, insecure attachment style and insecure ambivalent attachment style. Attachment styles are developed in the early childhood but often influence their future relationships in adulthood.[4]

Addiction disorder is considered to be disorder wherein individuals are unable to self-regulate and self-repair. Addiction also has an inverse relationship between secure attachment styles and there is a strong relationship between attachment styles and drug consumption among adolescents. Family is also a protect factor in assisting the individual in coping with life stressors. Early relationship experiences shape how the individuals fulfill their needs of intimacy. They try to replace the missing intimacy and connection by using substance as well as engaging in non-substance related addiction such as internet addiction, gaming addiction. This helps them to distract and overcome feelings of emptiness and find a replacement for the lack of intimacy and connection in their lives.[5-8]

Emotional regulation is a process wherein individual experience emotions and the way in which they are able to express those emotions.[9,10] It also consists of managing their emotional reactions in different stressful situations.[11] The effect of emotional regulation can be observed on one's behaviors, physiology, thoughts and feelings.[12]

Macklem found the relationship between addiction and inability to regulate one's emotions.[13] Individuals with internet addiction have difficulty in regulating their emotions and suppressing their emotions through internet use is one of the coping strategies used by them.[14-16] Individuals who use internet and smartphones are seen to be effectively regulating their negative emotions by spending increased time on internet.[17]

Internet is found to be coping strategy used to alleviate one's emotional distress.[18] It has also been reported that individuals with Internet Addiction have more difficulty in identifying and describing emotions, understanding emotional reactions and controlling their impulsive behaviors.[19-22]

Subjects and Methods

Study design

The research design is a cross-sectional study. A multistage cluster random sampling technique was applied for data collection in Pune. Pune city was divided into 4 clusters. Around 30–40 colleges were identified from each cluster and were randomly contacted for permission. The final data was collected from 8 colleges. The permission from college principal along with written consent of the participants was obtained. The classes from each college were also randomly allotted by the faculty or head. A total of 385 samples were considered for the final analysis. The inclusion criteria were young adults between the age group of 18 years to 28 years. Exclusion criteria were participants who have not signed the informed consent form, who have not completed the questionnaire and who have drop out of the study midway.

Study Instruments

The tools used for the study were a socio-demographic datasheet, Internet Addiction Test (Young),[2] Measures of Attachment Style,[23] Difficulties in Emotional Regulation Scale.[24]

Internet Addiction Test (IAT) by Kimberly Young, was developed to measure the presence and severity of Internet and technology dependency among adults and it consists of 20 items to measure the problematic internet usage. The term Internet is used to refer to all contact that individuals have with web-based services, including websites, Internet-based games, social media, and online entertainment, accessed on all types of computers, screens, devices, phones, portable electronic devices, and other forms of technology.[2]

Measures of Attachment Scale (MOAS) by Ahmad, Jahan and Imtiaz is a 27-item measure of adult attachment style fit to be conducted for the Indian population. The MOAS measures individuals on their attachment styles. The three types of attachment styles are – Secure Attachment, Ambivalent Insecure, Avoidant Insecure.[23]

Difficulties in Emotional Regulation Scale (DERS) by Gratz & Roemer is a 36 item self-report instrument designed to assess difficulties in emotion regulation. Each item is rated on a 5-point scale. The higher the score states there is more emotional dysregulation. The instrument yields six sub-scales: nonacceptance, goals, impulse, awareness, strategies, and clarity.[24]

Data Analysis

IBM SPSS Statistics, Version 20 was used for

statistical analysis of the data collected. Socio-demographic variables were denoted by frequency and percentage table and the mean and standard deviation of each variable is denoted in a table. Pearson's correlation test was used to find the association.

Ethical considerations

Maharashtra Institute of Mental Health's (MIMH), Pune Ethics Committee's approval was sought with the following number MIMH/IEC/06/ 2022-23 to conduct the study.

Results

Socio-demographic Details are in Table 1.

Table-1: Distribution of the Socio demographic data (N=385)

Variables	Label	Frequency	Percentage
Gender	Male	174	45.9
	Female	211	54.8
Relationship Status	Single	303	78.7
	In a relationship	49	12.7
	Prefer not to say	33	8.6
Present Living Condition	With Parents	232	60.3
	Hostel	115	29.8
	Alone	38	9.9
Physical Exercise	Yes	223	57.9
	No	162	42.1

A total of 385 data was analyzed for the final research study. From the 385 sample size, 174 (45.9%) were male and 211 (54.8%) were female, showing that female participants were slightly more than male participants. A majority of the participants, 303 (78,7%) were single. Those in relationship constitute to 49 (12.7%), and 33 participants (8.6%) prefered not to disclose their relationship status.

Regarding their living arrangements, 232 (60.3%) participants stay with their parents, whereas 115 (29.9%) stay in a Hostel or PG and only 38 (9.9%) stay alone. Over half the participants, 223 (57.5%) participants engaged in some form of a physical exercise, while 162 (42.1%) did not exercise at all.

The mean and standard deviation of the age of total sample is 20.05±1.95 which indicates that the mean age is 20 years of the total sample size.

It is noted that a majority of the sample uses social media, which is about 361 (93.8%) participants, followed by 299 (77.7%) participants streamed audio and video content which includes YouTube, Spotify and podcasts. Online shopping is also quite popular with 203 (52.7%) participants. Gaming was used by 147 (38.2%) participants and only 104 (27%) reported to use internet to read news online. Dating platform has the lowest scoring, where only 16 participants (4.2%) reported using dating apps. Social media, streaming audio-video content and online shopping is most commonly used.

Table-2: Internet Use among the participants (N=385)

Variables	Frequency	Percentage
Social media	361	93.8
Streaming	299	77.7
Gaming	147	38.2
Dating	16	4.2
Online Shopping	203	52.7
News reading	104	27

The above table indicates the correlation between Internet Addiction and the domains of Attachment styles. Pearson correlation was used to measure the strength and direction of linear relationship between two variables. Internet Addiction and Secure Attachment Style shows a negative correlation (-0.088) and is significant at ($p<0.05$) level which indicates a small inverse relationship between the variables. For the Ambi-valent Insecure Attachment Sttyle and Internet Addiction, there is a moderately positive significant correlation at $p<0.01$ level.

The present study also highlights that internet addiction has a positive significant correlation .405 ($p<0.01$) with subdomain: nonacceptance, goals, Impulse, strategies and clarity. This reflects that individuals are unaware of coping strategies to deal with their emotional disturbances and more often

Table-3: Correlation between Internet addiction & Attachment Style (N=385)

Variables		Internet Addiction Test	Secure Attachment	Ambivalent Insecure Attachment	Avoidant Insecure Attachment
Internet Addiction Test	Pearson Correlation	1	-.088*	.333**	.098
	Sig. (2-tailed)		.085	.000	.054

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

Table-4: Correlation between Internet addiction & Emotional Regulation (N=385)

Variables		Internet Addiction	Non-Acceptance	Goals	Impulse	Awareness	Strategies	Clarity
Internet Addiction	Pearson Correlation	1	.405**	.384**	.418**	-.041	.382**	.329**
	Sig. (2-tailed)		.000	.000	.000	.421	.000	.000

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

engage in poor coping strategies, including internet usage.

Discussion

Methodology and Socio-demographic Variables

This study was designed to assess the effect of Internet Addiction on Attachment styles, and Emotional Regulation. Internet addiction is an emerging public health concern and many young adults are increasingly seen to be addicted to internet. The young adults with internet addiction tend to experience emotional dysregulation. The data was collected from college going students between the age group of 18-28 years as the prevalence of internet addiction is higher among the younger population as suggested by previous researches. Previous studies conducted on Internet Addiction in Madhya Pradesh and Delhi[25-26] has also conducted their research on professional courses students and non-professional college students respectively. For this study, the data was conducted from Graduate and Post Graduate courses.

In the present study, the female participants were slightly higher than male participants, 211 (54.8%) and 174 (44.9%) respectively. While in previous studies it has been reported that males are more addicted to internet due to studying in engineering colleges or staying in rented accommodations[27], the present study reports that male and females are both addicted to internet. Another study conducted in Bengaluru also reported similar findings where males were at a higher risk of being addicted to internet than females.[28] This study's findings suggest that now both male and females are equally likely to be addicted to internet due to various factors. It is also seen that females are more like to be addicted to social media and male are predominantly addicted to gaming disorders.[29]

Internet Addiction and Attachment Styles

Internet Addiction and Secure Attachment Style shows a negative correlation and is significant at ($p<0.05$) which indicates a small inverse relationship between the varibales. As the internet addiction score increases the secure attachment style scores slightly decrease, which means that there is a weak but significant inverse relationship between the two. This indicates that if individuals have secure relationships and are able to maintain their relationship well, they do not engage in excessive internet use. A similar study conducted among the adolescents and young adults in Iran, reported a negative correlation between online addictions and secure attachment style and a positive correlation with online addictions such as social media addiction, online gaming addiction and insecure attachment style.[30] They may not feel the need to use internet to escape from their relationship difficulties and responsbilies, hence there is an inverse relationship between the two. In adult relationships, secure attachment styles can be

viewed as a protective factor for long term emotional stability and psychological well-being.[31]

For the Ambivalent Insecure Attachment Style and Internet Addiction, there is a moderately positive correlation (.333) and it is significant at $p<0.01$ level. This indicates that as the addiction increases, individiuals tends to have higher level of ambivalent insecure attachment. It can also imply that individuals with ambivalent insecure attachment style may have difficulties in their relationship causing them to use internet as a coping strategies in order to avoid their relationship difficulties. An online survey conducted to assess the role of attachment style and internet addiction reported that ambivalent insecure attachment style was particularly associated with pathological internet usage. Participants who had insecure attachment had a higher tendency to pathological internet usage than securely attached, indicating that they had limited interpersonal relationships.[32]

Individuals with ambivalent attachment style have high emotional dependence on their significant others, and often have a fear of abandonment which could lead to emotional dysregulation causing excessive internet use as a distraction or to seek emotional support.

Internet Addiction and Avoidant Insecure Attachment style have a correlation at .098 indicating a weak positive correlation. There is no significant and direct relationship between Internet addiction and Avoidant Insecure Attachment style. A similar findings were reported in a systematic literature review. There was no significant relationship found in avoidant attachment and intensive facebook usage. It is suggested that avoidant individuals are less likely to rely on others and they don't trust anyone to be attachment hence they do not seek external support online more specifically from social media sites.[33]

However, another study conducted among university students reported that avoidance attachment had a significant impact on internet addiction, social media addiction, mobile phone addiction.[34-36]

Internet Addiction and Emotional Dysregulation

The emotional regulation scale has 6 domains under it, namely, nonacceptance, goals, impulse, awareness, strategies and clarity. It can be noted that the Internet Addiction has a significantly positive correlation between nonacceptance, goals, impulse, strategies and clarity and no correlation with awareness.

Internet Addiction has a positive correlation at ($p<0.01$) level with nonacceptance, goals, Impulse, strategies and clarity which indicates that individuals who are unable to accept their emotional distress are more likely to have internet addiction as they use the internet to avoid their emotions. It suggests that indiviudals with emotional dysregulation are significantly addicted to internet usage. Individuals are unable to manage their emotions, have lack of clarity and awareness, are impulsive and hence use internet to manage or avoid their emotions. It is used as an escape from their emotional distress and it may be a coping strategy developed over the time. Individuals with internet addiction have a tendency to use the Internet to meet new people online and gain emotional support. They satisfy their emotional needs through online settings.[37-39]

Conclusion

Internet Addiction is an emerging public health concern in the field of addictive behaviors. The present study offers an insight into individual's attachment styles and emotional regulation which contributes to Internet addiction. The findings suggest that there is a significant correlation between internet addiction and ambivalent insecure attachment styles, indicating that there is considerable amount of relationship issues between young adults. Similarly, due to excessive internet use, there is emotional dysregulation reported in the participants which impact how they perceive and manage their emotional experiences.

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Original Article

A study of the Sociodemographic and Clinical Profile of Cancer patients in Tertiary Care Hospital

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ABSTRACT

Background: *Cancer patients often experience a range of mental health challenges due to complex nature of their diagnosis and treatment. Coping with the emotional impact of the illness is a significant challenge. Understanding and addressing psychiatric co-morbidities in cancer patients are crucial for the overall wellbeing of cancer patients.* ***Aims:*** *To study the Sociodemographic and Clinical Profile of Cancer Patients.* ***Material and methods:*** *57 patients who were diagnosed with cancer and presented in NIMS & R OPD/IPD were evaluated. Psychiatric evaluation was done on a structured proforma containing sociodemographic details, cancer profile. The diagnosis was made according to ICD-10 criteria. To assess the severity of psychiatric co-morbidities Hamilton anxiety rating scale, Hamilton rating scale for depression were applied.* ***Results:*** *The study revealed that psychiatric comorbidity was seen in a total of 34 (59.64%) patients. Out of which 18 (31.57%) fulfilled the criteria of depression, 10 (17.54%) fulfilled the criteria of anxiety, 4(7.01%) suffered from adjustment disorder and 2 (3.5%) had alcohol use disorder.* ***Conclusion:*** *Depression is the most common psychiatric comorbidity observed in cancer patients. The evaluation of cancer patients is vital for identification and management of various psychiatric comorbidities as it also impacts their prognosis.*

Key words: *Psychiatric co-morbidity, Cancer patients, Depression, Anxiety, Adjustment disorder*

Introduction

Cancer is leading cause of death worldwide. Despite of great advances in cancer treatment like chemotherapy, radiotherapy and immunotherapy, it remains one of the most common causes of death in India.[1] Diagnosis of cancer is a catastrophic stress. Thus, most patients with cancer are previously psychologically healthy individuals whose psychiatric diagnoses in the oncology setting reflect emotional reactions to the stresses posed by the cancer and its treatment.[2] A life-threatening illness like cancer will definitely have emotional consequences. Patients with cancer often experience low mood, low energy, hopelessness, helplessness, worry, anxiety, loss of appetite, sleep disturbances. So it's important to differentiate between normal level of sadness and depressive disorders[3] The common psychological complications in cancer patients are adjustment disorder, depressed mood, anxiety, loss of self-esteem, suicidal ideation. Depression is the most common psychological disorder in cancer patients. Depression that develops secondary to cancer is a pathological response to loss of normalcy as a result of cancer diagnosis, treatment or impending complications. Cancer treatments are usually long and patients require multiple hospitalizations. Due to the long course of treatment, multiple hospitalization and the side effects of chemotherapy and radiotherapy along with the stigma of being diagnosed with cancer has a significant effect on the mental

health of the cancer patients[4]. The emotional crisis that the cancer patients go through requires resilience and rapid adjustment to the diagnosis and challenges. This requires a proper study to know about the nature and severity of psychiatric disorder in cancer patients.[5] The study aimed to study prevalence of psychiatric comorbidities Cancer patients.

Materials and Methods

The study took place in the National Institute of Medical science and Research, Jaipur, Rajasthan. It was cross-sectional observational study that included 57 Cancer patients. Patients who were willing to give a written and informed consent for the study were taken up for the study. Patient who are diagnosed with cancer. Cancer patients on Chemotherapy or post Onco surgery of 18 years of age and above of both the genders were included. A semi-structure proforma was designed to obtain the socio-demographic profile, clinical profile and cancer profile of the patients. The diagnosis of the psychiatric morbidity was made using the ICD 10 criteria.[6] Specific tools were used to determine the severity of the morbidity - MINI,[7] Hamilton Anxiety Rating Scale,[8] Hamilton Rating Scale for Depression.[9] After the completion of data collection, the statistical analysis was performed with the help of SPSS/Microsoft Excel.

Results

Table-1: Sociodemographic variables of participants

Variables	No. of Patients (N=57)	
Gender	Males	36 (63.15%)
	Females	21 (36.84%)
Age	18-39	17 (29.82%)
	40-59	25 (43.8%)
	60-89	15 (26.31%)
Education	Illiterate	21 (36.84%)
	Primary	16 (28.07%)
	Secondary	9 (15.78%)
	Graduate & above	11 (25%)
Religion	Hindu	34 (59.6%)
	Muslim	23 (40.35%)
	Christian	-
	Others	-
Occupation	Homemaker	19 (28.12%)
	Student	-
	Employed	22 (38.5%)
	Unemployed	16 (28.07%)
Marital status	Married	48(84.21%)
	Unmarried	9(15.7%)
	Divorced	-
Socio-economic status	Upper	6 (10.52%)
	Middle	31 (54.38%)
	Lower	20 (35.08%)
Domicile	Rural	39 (68.42%)
	Urban	18 (31.57%)
Family type	Nuclear	20 (35.08%)
	Joint	37 (64.5%)

Table-2: Cancer variables

Site of Cancer	Total Patients (n=57)	Psychiatric Disorders	No. of patients (%)
CA oral cavity	24	Depression	6 (25%)
		Anxiety	2 (8.33%)
		Alcohol abuse	1 (4.16%)
Gynecological CA	11	Depression	3 (27.27%)
		Anxiety	4 (36.3%)

Table-2: *Contd....*

Site of Cancer	Total Patients (n=57)	Psychiatric Disorders	No. of patients (%)
Gastrointestinal CA	14	Depression	6 (42%)
		Adjustment disorder	3 (21%)
		Anxiety	3 (7%)
Hematological CA	2	Depression	0 (0%)
		Anxiety	0 (0%)
CA Breast	4	Depression	3 (75%)
		Anxiety	1 (25%)
CA Lung	2	Adjustment disorder	1 (50%)
		Anxiety	0 -
		Alcohol abuse	1 (50%)

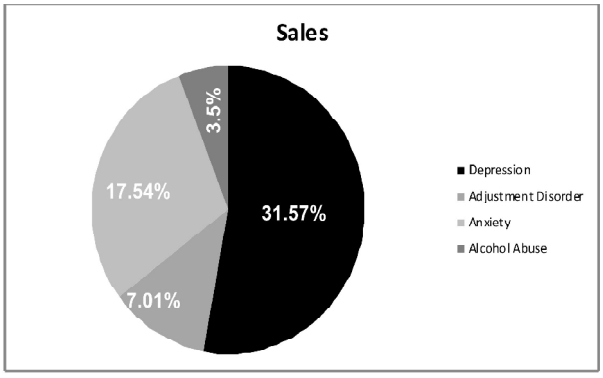

Fig. 1: Pie chart showing psychiatric morbidity

Table-3: Severity of depression according to Hamilton Depression Rating Scale (HDRS)

DEPRESSION	
Mild	5 (27.44%)
Moderate	9 (50%)
Severe	4 (22.22%)

Table-4: Severity of depression according to Hamilton Anxiety Rating Scale (HAM)

ANXIETY	
Mild	3 (30%)
Moderate	5 (50%)
Severe	2 (2%)

Discussion

A total of 57 patients were taken in our study, out of which total number of males 63.75% and females were 36.25% which was similar to the findings of study by Bhattacharyya et al[4] observed 60% males among 100 patients, with depression (35%) driven by oral cavity cancer (30%), similar to our study (42.11% oral cavity cancer) and different from the study by Dinker et al[5] where the females were more than males found 54% females among 150 patients, with breast (20%) and gynecological cancers (15%) increasing depression (40%), contrasting our male-dominated sample.

The majority of the patients belonged in the age group 40-59 years (43.8%). This finding is supported by the study by Dinker et al[5] reported 40% aged 40–59 among 150 patients, with high psychiatric morbidity (74%) due to treatment stress, supporting our age distribution and different from findings of Roy et al[10] in which majority of patients were in age group 61-70 years [21%] differing from our middle-aged group.

Majority of the participants belonged to a joint family (64.5%), this finding is consistent with Chaudhury et al[1] reported 60% joint families among 120 patients different from the study by Hans & Dar[2] where majority of the patients belonged to a nuclear family found 60% nuclear families among 100 patients.

Majority of the participants belonged to a rural background (68.42%), our study supports the finding of the study by Hans & Dar[2] noted 65% rural patients among 100, with high psychiatric morbidity (50%) and different from Roy et al.[10] reported 40% rural patients among 200, with urban patients (60%).

Majority of the patients were employed (38.5%) followed by patients who were homemaker (28.12%%), this finding is similar to Chaudhury et al[1] and this finding is different from the study by Hans & Dar[2] where majority of patients were household worker (54.5%).

Majority of the patients were illiterate (36.84%). This finding is supported by the study by Dinker et al[5] noted 35% illiteracy among 150 patients, with higher depression (40%) due to poor treatment comprehension, similar to our findings, different

from Gopalan et al.[11] reported 20% illiteracy among 384 patients, with educated patients showing more adjustment disorders (22.6%), possibly due to greater prognosis awareness.

Majority of patients were married 84.21% consistent with Chaudhury et al.[1] found 80% married patients among 120, with lower morbidity (45%) due to spousal support, aligning with our married cohort and different from Gopalan et al.[11] noted 30% unmarried patients among 384, with higher adjustment disorders (25%) due to lack of support, contrasting our married majority.

Majority of patients belong to middle Class 54.39% consistent: Bhattacharyya et al.[4] reported 50% middle-class patients among 100, with depression (35%) linked to financial strain, mirroring our socioeconomic profile and different from Roy et al.[10] found 60% lower socioeconomic status among 200 patients, with higher anxiety (25%) due to economic barriers, differing from our middle-class dominance.

Out of total of 57 patients, 34 (59.64%) patients were found to have psychiatric morbidity this finding is consistent with Shankar et al.[12] reported a similar prevalence (55%) among 100 cancer patients, with depression (30%) and anxiety (20%) prominent, suggesting a comparable psychological burden in tertiary care settings and different from Gopalan et al[11] found a lower prevalence (41.7%) among 384 patients, with adjustment disorders (22.6%) more common than depression (10.9%), possibly due to early-stage cancer inclusion or diagnostic differences.

The distribution of cancer types and their association with psychiatric comorbidities provides critical insights. Oral cavity cancer was the most common (24 patients), followed by gastrointestinal cancer (14 patients), gynecological cancer (11 patients), breast cancer (4 patients), hematological cancer (2 patients), and lung cancer (2 patients). Depression was most prevalent among breast cancer patients (75%), followed by gastrointestinal cancer (42%) and gynecological cancer (27.27%). Anxiety was notably high in gynecological cancer (36.3%) and oral cavity cancer (8.33%). Adjustment disorder was observed in gastrointestinal (21%) while alcohol use disorder was reported in two cancer patient.

The high prevalence of depression in breast cancer patients aligns with Thakur et al.[3] who noted significant depressive symptoms among women with breast cancer, potentially due to body image concerns, treatment-related side effects, and societal stigma. Gastrointestinal cancer patients showed a notable burden of depression and adjustment disorder, possibly linked to the chronic nature of the disease and its impact on quality of life.

Gynecological cancer patients exhibited a high rate of anxiety, which may be associated with the invasive nature of treatments and their impact on reproductive health. The absence of psychiatric comorbidities in hematological cancer patients could be due to the small sample size (2 patients), limiting generalizability.

Conclusion

Depression is the most common psychiatric comorbidity observed in cancer patients. The evaluation of cancer patients is vital for identification and management of various psychiatric comorbidities as it also impacts their prognosis. As further research advances, a holistic approach that combines medical and psychological interventions will be essential in enhancing the overall quality of life for individuals with cancer.

Limitations

This study was designed to be a cross-sectional study where data was collected from a tertiary care Hospital, hence findings cannot be applied to entire community. The sample size of the study was small. The sample was dominated by subjects from rural background and lower socio-economic status, subjects from urban background and higher socio-economic status might display a different pattern.

Financial Support

There was no financial support provided to conduct this study.

Conflict of Interest

There was no conflict of interest.

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Original Article

To Assess Psychological Disturbances and Quality of Life among Family Caregivers of Alcohol Dependence Syndrome

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ABSTRACT

Background: *Caregivers of individuals with Alcohol Dependence Syndrome (ADS) experience significant stress, and a diminished quality of life due to the challenges associated with caregiving.* ***Aims****: This study aims to assess the impact of ADS caregiving on stress levels, caregiver burden, and overall well-being.* ***Methodology****: A cross-sectional study was conducted using tools such Depression, Anxiety and Stress scale (DASS), and WHO Quality of Life (WHOQOL-BREF) questionnaire.* ***Results****: Preliminary findings indicate high stress levels, and reduced quality of life among caregivers, emphasizing the need for targeted interventions such as psychological support and community-based programs.* ***Conclusion:*** *Addressing these concerns is crucial to improving caregivers' well-being and enhancing the support systems available to them.*

Keywords: *Alcohol Dependence syndrome, Quality of Life, Depression, Anxiety, Stress and Caregivers.*

Introduction

Family plays a crucial role in the care of individuals with mental illnesses, particularly in India, where cultural traditions of interdependence, strong family ties, and a shortage of mental health professionals make familial support essential.[1] Among mental health concerns, alcohol dependence remains a significant social and personal challenge worldwide. According to the Global Status Report on Alcohol, Alcohol Use Disorders (AUDs) contribute to 1.4% of the global disease burden.[2]

In India, a nationwide study on alcohol and drug abuse by Sarkar et al. estimated the prevalence of alcohol use at 21.4%.[3] Research from rural southern India found that 14.2% of the surveyed population exhibited hazardous alcohol use based on the Alcohol Use Disorder Identification Test (AUDIT).[4] Similarly, a study from a tertiary care hospital in a rural district of southern India reported that 17.6% of admitted patients had hazardous alcohol use.[5]

Caregivers of individuals with Alcohol Dependence Syndrome face numerous challenges, including financial strain, social isolation, and emotional distress. The stigma surrounding addiction further complicates their ability to seek help, leading to increased feelings of frustration and loneliness. Witnessing a loved one struggle with addiction and relapse can be emotionally exhausting, often resulting in feelings of guilt, helplessness, and self-doubt. Despite these hardships, caregivers play a vital role in the recovery process, offering support that significantly contributes to the individual's journey toward sobriety.[6]

Evaluating quality of life is essential to understanding how illness and treatment impact an individual's ability to carry out daily activities. Various metrics are used to assess quality of life, providing valuable insights into how different

conditions affect every day functioning.[7] Documenting the impact of illness on daily life can guide interventions aimed at improving overall well-being. Quality-of-Life measures also help identify specific challenges faced by individuals with particular illnesses and assess the effectiveness of treatments. For example, if a cancer treatment has severe side effects and only modest survival benefits, its overall impact may be more detrimental than the disease itself. Such assessments enable informed comparisons between treatment options.[8]

Depression, also known as depressive disorder, is a common mental health condition characterized by a persistent low mood, loss of interest or pleasure in activities, and a general sense of disengagement from life. Unlike temporary mood fluctuations, depression is a prolonged state that significantly impacts daily functioning.[9]

Anxiety, on the other hand, involves feelings of fear, worry, and unease, often accompanied by physical symptoms such as a racing heartbeat, sweating, and restlessness. While anxiety is a natural response to stress: such as before an exam or a major life decision — excessive or chronic anxiety can interfere with daily life.[9]

Stress is the body's reaction to challenging situations and is a normal part of life. While short-term stress can motivate individuals to face obstacles, chronic stress can negatively impact overall well-being. The way a person manages stress plays a crucial role in their mental and physical health.[9]

This study aims to assess the stress, and quality of life among caregivers of individuals with Alcohol Dependence Syndrome (ADS).

Material and Methods

Study was conducted at the Maharashtra Institute of Mental Health, Pune, and Sassoon General Hospital, covering both inpatient and outpatient departments. A hospital based descriptive research design was used. A total of 60 caregivers of individual with alcohol dependence syndrome were selected for the study.

The study participants included male and female caregivers of individuals diagnosed with Alcohol dependence syndrome as per ICD-10-DCR,[10] aged between 25 and 60 years. Participants with at least a primary level of education were included, and written informed consent was obtained from them. The caregiver male and female living with individual with alcohol dependence syndrome. Who given written informed consent. Duration of illness more than 2 years, and participants were taking care of individuals with ADS at least 6 months or above were included from the study. Participants with multiple substance use, presence of any other psychiatric disorder, mental retardation, developmental disorder and neurological co-morbidity were excluded from the study.

The following assessment tools were used in the study:

a) *Socio-demographic and clinical data sheet:* Self-prepare data sheet was prepared for the study which included social-demographic variables include. Age, Gender, Marital Status, Education, Occupation, Family Income, Mother Tongue, Family Type, Domicile, Duration of Illness and no of hospitalization respectively.

b) *WHOQOL-BREF:* The WHOQOL-BREF is a 26-item tool that assesses four areas: physical health (7 items), psychological health (6 items), social relationships (3 items), and environmental health (8 items). It also includes questions on overall quality of life (QoL) and general health. Each item is rated on a 1 to 5 scale, which follows a five-point ordinal format.[11]

c) *Depression, anxiety and stress scale:* Lovibond (1995) developed the Depression Anxiety Stress Scale (DASS). DASS-21 was created by Lovibond (1995) at the University of New South Wales in Australia. Three self-report measures are used in the Depression, Anxiety, and Stress Scale-21 Items (DASS-21) to gauge the emotional states of stress, anxiety, and depression. Seven items total, broken down into subscales with related material, make up each of the three DASS-21 scales. The scores for the pertinent elements are added together to determine the scores for stress, anxiety, and depression. A dimensional, as opposed to a categorical, understanding of psychiatric pathology forms the basis of the DASS-21.[12]

Statistical analysis was organized and coded into

a structured format. A master chart was created to systematically arrange the information. The data was then analyzed using SPSS (Statistical Package for Social Sciences) version 20.0, used for appropriate statistical analysis.

Results

Table-1: Socio-demographic details of Care Givers (N=60)

Variables	Frequency	Percentage
Caregiver's Education		
Illiterate	4	6.7%
Primary	18	30%
Secondary	17	28.3%
Higher Secondary	7	11.7%
Graduate	10	16.7%
Postgraduate	4	6.7%
Caregiver's Occupation		
Farmer	3	5%
Business	2	3.3%
Unemployed	12	20%
Housewife	1	1.7%
Service	2	3.3%
Other	40	66.7%
Caregiver's Domicile		
Rural	7	11.7%
Semi urban	4	6.7%
Urban	49	81.7%
Caregiver's Martial Status		
Married	45	75%
Unmarried	12	20%
Divorce	1	1.7%
Separated	2	3.3%
Caregiver's family type		
Joint	28	46.7%
Nuclear	30	50.0%
Extended	2	3.3%

caretakers, the majority (66.7%) worked in "Other," while 20% were jobless. Urban areas were home to a sizable share of caregivers (81.7%). Total 75% participants were married. Nuclear families made up 50% of the family structure, while joint families made up 46.7%.

Table 2 shows *Depression:* 15% of caregivers had extremely severe symptoms, whereas 80% had moderate (40%) or severe (40%) symptoms. *Anxiety:* 18.3% of respondents expressed severe anxiety, while a startling 68.3% reported extremely severe anxiety. *Stress:* Just 5% of caregivers had stress within the normal range, but the majority experienced moderate stress (35%) or severe stress (36.7%).

Table 3: Level of Domain wise quality of life of caregivers of alcohol dependence syndrome

	Poor	Average	Good
Physical Quality of Life	5 (8.30%)	52 (86.70%)	3 (5.00%)
Psychological Quality of Life	2 (3.30%)	28 (48.70%)	30 (50.00%)
Quality of Life in Social Relation	21 (35.00%)	31 (51.70%)	8 (13.30%)
Environmental Quality of Life	12 (20%)	43 (71.70%)	5 (8.30%)

Table 3 shows that some number of participants rated their physical quality of life as low (8.3%) or good (5%), with the majority (86.7%) rating it as average. Just 3.3% of participants rated their psychological quality of life as low, with the remaining 48.7% rating it as ordinary and 50% rating it as good. More than half (51.7%) said their quality of life in social connections was average, while 35% said it was poor. Although 20% rated it as low, environmental quality of life was likewise primarily average (71.7%).

Table-2: Assessment of the DASS caregivers of alcohol dependence syndrome (N=60)

	Normal	Mild	Moderate	Sever	Extremely Sever
Depression	2 (3.30%)	1 (1.70%)	24 (40.00%)	24 (40.00%)	9 (15.00%)
Anxiety	1 (1.70%)	2 (3.30%)	5 (8.30%)	11 (18.30%)	41 (68.30%)
Stress	3 (5.00%)	12 (20.00%)	21 (35.0%)	22 (36.70%)	2 (3.30%)

Table No 1 shows that mean age of the caregivers were 39.75 ± 9.97 years, participants duration of illness was 12.21 ± 7.27 years in which every patient has at least 2 years of illness. A small number of caregivers were graduates (16.7%) or postgraduates (6.7%), with the majority having only primary (30%) or secondary (28.3%) education. Of the

The table 4 shows the coefficient of correlation between DASS and quality of life was found using Pearson's correlation coefficient. The correlation coefficient (r = 0.32 was significant (p-value = 0.01) at 5% level of significance. The statistical analysis

Table 4: Correlation of stress and quality of life among caregivers of alcohol dependence syndrome (N=60)

DASS	Quality of life	Correlation 'r'	p-value
33.33 ± 6.73	74.58 ± 11.74	0.32	0.01

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

and interpretation of data show that there is correlation between stress and quality of life among caregivers of alcohol dependence syndrome.

Discussion

The distribution of alcohol dependency syndrome caregivers is seen above. 30% of the caregivers had completed their primary education, 11.7% had completed higher secondary school, and 16.70% had completed their graduation, according to education background data. The distribution of alcohol dependency syndrome caregivers is displayed in the above table. 20% of the caregivers were professionals, according to occupation. 3.30% of the caregivers owned their own company. 5% of the caregivers were students, and five percent were farmers distribution of alcohol caretakers.

In North India, the average age of people with alcoholism and their primary caretakers was 44.72 ± 8.95 and 41.17 ± 10.65 years, respectively, according to a study by Mattoo et al.[13] The bulk of the patients in their study (88%) were from Muslim and Hindu backgrounds because alcohol is forbidden in Islam. Additionally, 76% of patients were married, and 76% of instances included people from lower- to middle-class backgrounds, according to the study. These results are consistent with those of a study carried out in Punjab, India, which found comparable sociodemographic trends.[14]

Among the 200 participants in our study, all were male, suggesting that deaddiction treatment in our center is primarily sought by men, a trend consistent with other regions of the country. The sociodemographic characteristics of caregivers in our study closely resembled those reported in a similar study conducted in Ranchi, India.[15]

Most caregivers were women, primarily the spouses of the patients. In our society, cultural norms often designate men as the primary earners, which may place the caregiving responsibility on women.[15] A study also found that female family members, especially partners, were more commonly caregivers than mothers and sisters. However, unlike our findings, that study also highlighted a notable presence of male caregivers, such as fathers, uncles, and brothers.[16]

The results of this study make it abundantly evident that those who care for people with alcohol dependency syndrome frequently experience stress, worry, and sadness. A five-level classification system was used to evaluate these conditions: normal, mild, moderate, severe, and extremely severe. Caregivers had an average stress score of 23.33, indicating that their stress levels were high yet normal. In terms of depression, 15% of caregivers experienced extremely severe symptoms, 40% reported moderate symptoms, and another 40% reported severe symptoms. With 68.3% of caregivers reporting extremely severe anxiety and 18.3% reporting severe anxiety, anxiety was a particularly worrying issue.

In this study stress was common, with 35% of caregivers reporting moderate stress and 36.7% reporting severe stress. 87.18% of caregivers scored above the clinical cut-off (>17), indicating clinically severe depression. There was a significant positive correlation between stress and quality of life ($r = 0.32$, $p = 0.01$), suggesting that higher stress was linked to worse quality of life among caregivers. Furthermore, caregivers who did not seek treatment for their relative's addiction had a considerably higher mean BDI score ($p < 0.04$), indicating a clear correlation between caregiving strain and behavior related to seeking help.

These results are consistent with earlier studies. Previous study found that caregivers of people with alcohol dependence in North India experienced considerable levels of psychological distress. Similarly, 93% of caregivers reported moderate to severe level, especially when patients had frequent hospitalizations. Furthermore, one study found that when patients remained sober over time, caregiver distress decreased dramatically.[17,18]

Conclusion

Caregivers of individuals with alcohol dependence syndrome experience significant stress, anxiety, and depression, all of which adversely affect their quality of life. A notable correlation between stress and quality of life highlights the urgent need for mental health support for caregivers. The study concludes that the majority of respondents were male, with most having limited education. Additionally, a significant portion of the respondents were employed in occupations categorized as "other." Most caregivers came from nuclear families and lived in urban areas.

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Original Article

Mental Health Impact of the COVID-19 Pandemic on medical students from Delhi

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ABSTRACT

Background: *The COVID-19 pandemic highlighted medical students as a group vulnerable to mental health issues with several studies emphasizing factors contributing to their worsening psychological well-being during the pandemic. With the recent surge in the number of active cases of Covid 19, there is a need to be alert to sensitise, plan mental health assessments, take suitable measures.* ***Aim:*** *To determine the prevalence of psychological burden in medical students and use initial screening, then to provide appropriate intervention as per the standard of care.* ***Methods:*** *Questionnaire-based study was conducted on a sample of 291 medical students during the nationwide lockdown of Covid 19 that assessed mental health using the DASS-21 scale and open ended questions.* ***Results:*** *The prevalence of symptoms of depression, anxiety, and stress was found to be 58.42%, 53.95% and 40.89% respectively. Subsequently, experienced psychiatrists provided interventions as per the standard of care to the medical students having more than the cut off scores on either of the three sub-scales of DASS-21, to those who consented and responded.* ***Conclusion:*** *The prevalence of mental health impact in our study came out to be comparable to or greater than previous studies done on similar cohorts of medical students. Our study highlights the need for mental health screening, appropriate timely interventions to address the mental health needs of medical students.*

Key Words: *Tele-counselling, Mental Health, Medical Students, COVID-19*

Introduction

COVID-19 caused by the novel SARS-CoV-2 virus, was declared a pandemic by the World Health Organisation (WHO) on 11th March 2020,[1] an increase in the number of active cases has again been reported in media in recent times in 2025. University of Delhi accordingly announced the closure of medical colleges during the pandemic and medical students attended online lectures from their residences as per updated academic session guidelines,[2] missing out on in-person clinical training. Telemedicine Practice Guidelines released by the Medical Council of India under the Ministry of Health and Family Welfare on 25th March, 2020,[3] served as a boon during the pandemic as it helped avoid exposure to the deadly virus while still enabling the population to seek consultation for their mental health needs.

Mental health problems in medical students have been reported even before the pandemic. In a cross-sectional American study,[4] 18.3% of the sample met the cut-off score for depression while the prevalence for anxiety was found to be 20.9% for pharmacy students and 11.3% for medical students. One of the major reasons cited is the lack of help-seeking behaviour due to stigma associated with mental health problems.[4] A study assessing sleep quality in medical students in Saudi Arabia found depression, anxiety, and stress to be as high as 42.1%, 52.6%, and 30.5%, respectively, along with being significantly related to poor sleep quality which was prevalent in 63.2% of the sample population.[5] A study

comparing pre- and post-pandemic mental health and behavioural data, found a significant increase in depression, anxiety, and sedentary time amongst students, which was also associated with an increase in coronavirus-related news coverage.[6] In a 3-year longitudinal Brazilian study, mental health assessment of medical students from 2018 to 2020 did not have any significant difference despite COVID-19.[7]

Tele-mental health services provide privacy to the medical students seeking consultation, and permits early intervention thereby making support available when needed the most.[8] The current study was carried out to screen the medical students for mental health using a screening questionnaire to assess the depression, anxiety and stress parameters and to provide timely interventions to medical students during the pandemic by experienced psychiatrists in the form of tele-counselling and in-person consultations.

Material and Methods

Period, setting and design

The observational study was designed by the Department of Psychiatry of a tertiary teaching hospital in New Delhi. The study was approved by the Institutional Ethics Committee and conducted between December 2020 and July 2021.

Selection Criteria

Medical undergraduate students from 1st to 4th (3rd part II) professional years of Bachelor of Medicine and Bachelor of Surgery (MBBS) and enrolled in one of the medical colleges of the University of Delhi were included in the study.

Sample size calculation

In one of the pioneer studies conducted on Asian medical students of Wuhan and Beijing,[9] the prevalence of depression during the COVID-19 pandemic was found to be 25.3% in a sample of 933 students. Using this population proportion (p), we calculated the sample size (n) to be 291 for a confidence interval of 95% (z score = 1.96) with a margin of error of 5%.

Hence, the present study targeted a sample size of 291.

Methodology

The first phase was conducted after ethics approval in those students who gave consent to participate in the study during which the University of Delhi's medical institutes were observing the lockdown. Students meeting the selection criteria were approached through their class representatives and a subject information sheet was shared. Link to the Google Form consisted of the Consent Sheet and Case Record Form (CRF) was sent to email IDs shared by interested students. Only those who provided their informed consent on the first page were directed to the rest of the form and included as participants in the study.

The following measures within the Case Record Form were noted by the study participants-

- **Personal details** - Name, Age, Contact no, Date of filling the form, Gender, University of Delhi College, Professional year currently in, Religion, Resident city, Suffering from or diagnosed with any disease or health issue (including mental health disorders) currently? Yes/No If yes, please mention (if you're comfortable), Have you used tele-consultation or tele-counselling healthcare services during lockdown? Mark only one oval (Yes/No), Have you contracted COVID-19 since the beginning of the pandemic? Yes/No/Don't know.
- Write briefly on your experience with the current virtual teaching scenario during the pandemic. (Open ended response) and answer knowledge, practise related questions of Covid 19. Response to each question within these categories, excluding open-ended questions, was scored such that higher total scores corresponded with better Knowledge, Practice and adaptability to the disruptions during the lockdown.
- Depression Anxiety and Stress Scale 21-item version (DASS-21)[10]

DASS-21 (Lovibond and Lovibond,1995) is a shorter version of the original DASS 42-item scale and is indicated for clinical use for adult populations. It is a combination of three sub-scales of 7 items each for Depression, Anxiety and Stress assessment.

The work done by previous researches in different parts of the world was referred for the present study[11,12] and questions on knowledge and practise of Covid 19 were designed keeping in mind

Indian scenario. The second phase of the study was carried out after filling of google forms. All participants were informed about tele-counselling services to be provided by the 1st and 3rd authors, who are experienced teaching faculty (Both SS, MSB- First, third author). Participants whose had higher than the cut off scores on either of the 3 sub-scales of the DASS-21 questionnaire were contacted directly through the contact numbers by teaching faculty. Hindi, English pamphlets, online training videos were developed and circulated by the Department of Psychiatry to cope with the crisis created by the pandemic.

Tele-counselling was provided to all interested participants after filling the initial details as mentioned above. Tele-counselling Performa comprised of the details such as demographic details, call log, chief complaints, history of past illnesses, and comprehensive psychiatric history of self-harm, depression, anxiety, irrelevant speech, agitation, disorientation, psychotic symptoms, suicidal tendencies, or substance abuse were recorded in the specifically designed tele-consultation proforma of the Department of Psychiatry. Regular follow-ups and in-person consultations, when required, were conducted for consenting study participants.

Statistical analysis

IBM SPSS version 20.0 software was employed for statistical analysis. Frequency distribution of the study sample was found out. Prevalence of Depression (D), Anxiety (A) and Stress (S) was calculated. The coefficient of correlation was calculated for different parameters against the mental health assessment scores. Qualitative analysis was carried out for the open ended responses by identifying the themes.

Results

Sociodemographic Characters of the Sample

Out of the 291 respondents, 62.2% were female, 37.5% were male and 0.3% did not wish to specify their gender. Average age of the sample population came out to be 20.84 years (median = 21 years). All students were enrolled in a medical college under the University of Delhi, and 74.6% of the respondents were residents of the National Capital Region (NCR) of Delhi. The percentage of participants from each professional year of MBBS i.e., year I, II, III and IV were 27%, 26%, 36% and 11% respectively. 12.7% of the sample had contracted SARS-CoV-2 at least once before January 2021, 14.4% were not sure if they had contracted the disease during the pandemic, 75.9% of the respondents had never contracted the virus. 16.4% of the participants had used tele-consultation services during the lockdown. 11.7% of the respondents were suffering from a physical or psychological ailment.

Students who had medical or psychological illnesses had significantly higher mean scores for depression, anxiety, and stress compared to the group without any current diagnoses.

The professional yearwas found to be significantly ($p = 0.021$) associated with the severity of stress. The presence or absence of an existing illness was significantly associated with severities of depression ($p = 0.001$), anxiety ($p < 0.001$), and stress ($p = 0.001$). Contracting the COVID-19 virus since the beginning of the pandemic was significantly ($p = 0.041$) associated with different severity levels of anxiety.

The most popular resources used to obtain information about the pandemic and new developments included verified social media accounts (80.8%) and news articles (80.1%). 61.9% of the sample kept regularly updated via WHO website articles and notifications. 74.2% of the students reported feeling overwhelmed by the news and avoiding it during the lockdown.72.8% of respondents perceived themselves to be well-informed, and 48% knew that the average exposure time, for transmission of the virus when in close contact with an infected person, was 15 minutes.

On pandemic-related practices, 91.1% claimed that they wore masks and practiced social distancing in gatherings and 80.8% took extra sanitary precautions like bathing after coming back home from a public or crowded place. 89% reported an increase in hygiene practices like handwashing, avoiding handshake compared to pre-pandemic times. 82.1% of participants stated that they would avoid using public transport if their colleges reopened amidst the pandemic.

The mean score for Practices regarding COVID-19 was significantly greater ($p = 0.024$) for the 'normal' group compared to the 'extremely severe anxiety' group. On correlating with the absolute scores for the 3 DASS-21 sub-scales, Knowledge

was significantly negatively correlated with depression (r = - 0.181, p = 0.002) and stress (r = - 0.142, p = 0.015). Significant negative correlations were also found between Practice and anxiety scores (r = - 0.155, p = 0.008). All correlations (r <0.2) had very low to negligible strength of association. Table 1 shows the association of Knowledge & Practice questions with DASS 21 items of Depression, anxiety & stress scores.

suicidal ideation during the period of the pandemic and 7.56% experienced an increase in substance use.

The prevalence of symptoms of depression, anxiety, and stress was found to be 58.42%, 53.95% and 40.89% respectively. Multiple follow-up tele-counselling sessions as per individual needs and consent were carried out throughout the intervention period. Four students were advised to visit the Outpatient Department for evaluation to define the

Table-1: Distribution of Depression, Anxiety, Stress scores using DASS 21 item in study sample (n=291) medical students

	Depression, N	Depression, %	Anxiety, N	Anxiety, %	Stress, N	Stress, %
Extremely severe	39		41		12	
Severe	31		31		38	
Moderate	56		58		37	
Mild	44		27		32	
Total	170	58.42%	157	53.95%	119	40.89%
Normal	121		134		172	

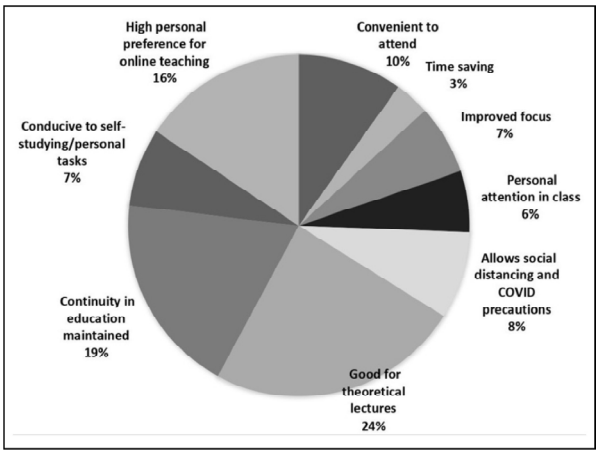

Fig. 1: Showing the merits of online classes in medical students during lockdown

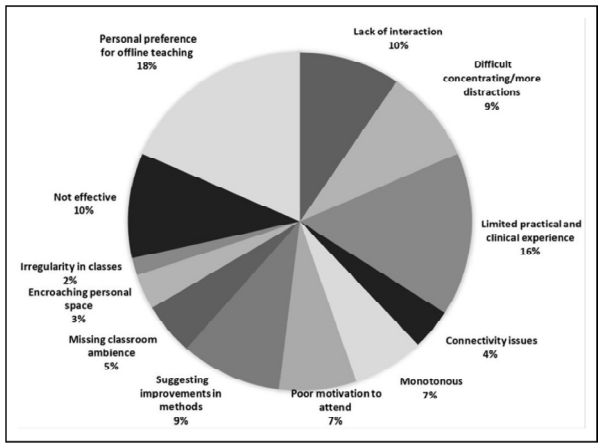

Fig. 2: Shows demerits of online teaching of medical students during lockdown

A total of 118 students responded to the open-ended question regarding their experience with online learning. Qualitative analysis carried out by authors identified dichotomous themes of merits as shown in Figure 1 and drawbacks of online classes mentioned by the students as shown in Figure 2and the frequency of each sub-theme under these broad themes has been depicted in Figures 1 and 2 respectively.

70.45% people felt they were experiencing mood swings aggravated by the current environment, 46.73% felt more worried about day-to-day chores and 42.95% felt they had grown more sensitive to criticism. 11.34% of respondents mentioned having clinical diagnosis which was as follows: Panic Disorder (300.01), Generalized Anxiety Disorder (300.02), Obsessive Compulsive Disorder (300.3) and Acute Stress Disorder (308.3). Pharmacological and non-pharmacological approaches were used on case to case basis as per the usual standard of care to those medical students who consented and responded.

Discussion

Our study revealed the prevalence of mild to extremely severe symptoms of depression, anxiety and stress, to be 58.42%, 53.95% and 40.89% respectively. Previous published works on Covid 19

from different parts of the world that had been reported which the present study authors referred.[11,12] The prevalence figures of the current study were more than an Indian study conducted in Bangalore which was carried out in April, 2020[13] at a time when the pandemic-related restrictions had been implemented for only over a month. However, our findings were comparable to a previous study using different screening tools[14] and a meta-analysis of over 200 studies which found the pooled prevalence of depression, anxiety, and stress to be 41%, 38%, and 34% respectively.[15]

The increase in reported prevalence as the pandemic progressed could be linked to heightened worry of acquiring the illness amongst the population.[16] Other studies have also reported better practices during pandemic in females,[17] but have also found them to have greater knowledge and awareness than male students.[17,18] In previous literature, higher knowledge has been protective against depression, while good practices and attitudes have been linked to fewer mental health problems like the present study.[18]

To the best of our knowledge, this study was one of the first to use mental health assessments and information collected from students for designing interventions during the COVID-19 pandemic. Since, it has been highlighted in previous studies that poor mental health is common-place in medical students regardless of the pandemic,[7] our study emphasizes the need for regular screening and in-house mental health interventions for medical students. The strength of the present study was the initial approach of a fellow student whom the medical students felt comfortable and then the subsequent interventions by mental health experts could be undertaken. The use of technology helped take up the innovative approach to reach out the medical students. Low connectivity, not consenting to participate are some of the hassles which can be overcome in the future work. The medical students should have enough hands on training to join the online classes and should be made well aware of their mental health needs and how to reach out for help, whom to reach out for interventions. Public lectures and mental health programmes are creating awareness of the mental health needs and regular efforts are required in this direction.

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Conflicts of Interest

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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Original Article

Patterns of Opioid Use and Psychiatric Comorbidities Among Patients with Opioid Use Disorder: A Cross-Sectional Study

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ABSTRACT

Background: *Substance abuse, including opioid dependence, is a significant global health issue with severe social and health implications. In India, opioid use, particularly heroin and Doda-Chura, has become a major concern, with cultural and historical factors influencing its prevalence. This study aims to investigate the clinical characteristics, sociodemographic profiles, and psychiatric co-morbidities among individuals with opioid use disorder.* ***Aims:*** *The study aimed to assess the sociodemographic and clinical profiles of patients with opioid use disorder and evaluate psychiatric co-morbidities using various psychological instruments.* ***Material and Methods:*** *A cross-sectional observational study was conducted at a tertiary care hospital, involving 40 consenting patients with opium use disorder. Participants were assessed using a semi-structured proforma for sociodemographic and clinical data and evaluated for psychiatric co-morbidities using the General Health Questionnaire, Hamilton Anxiety Rating Scale, Brief Psychiatric Rating Scale, and Hamilton Rating Scale for Depression.* ***Results:*** *The majority of participants were heroin/smack users (35%, n=14), with 27.5% (n=11) using a combination of opioids, 20% (n=8) using Doda-Chura, and 17.5% (n=7) using pharmaceutical opioids. The primary routes of opioid administration were oral (30%, n=12), intravenous (27.5%, n=11), inhalation (22.5%, n=9), and a combination of methods (20%, n=8). Psychiatric co-morbidities were present in 55% of the patients, with depression (77.27%), anxiety (50%), and psychosis (9.09%) being the most common disorders.* ***Conclusion:*** *The study highlights diverse patterns of opioid use and significant psychiatric co-morbidities among opioid-dependent individuals. These findings underscore the need for comprehensive treatment strategies that address both substance dependence and mental health issues.*

Keywords: *Opioid use disorder, Heroin, Doda-Chura, Pharmaceutical opioids, Psychiatric co-morbidities.*

Introduction

Substance abuse is a major global health issue, leading to various social and health problems. In India, alcohol is the most commonly used psychoactive substance, with 14.6% of the population using it. Cannabis and opioids follow, with 2.8% and 2.1% usage rates, respectively. Heroin is the most prevalent opioid, and in Rajasthan, about 3 million people required help for opioid addiction, highlighting the broad impact of substance abuse.[1] Opioids are very dangerous, particularly when injected, due to the high risk of overdose and early death. Limited access to treatment for infectious diseases like HIV and hepatitis worsens the health impacts of opioid use, which is a major concern in India.[2]

Opioid use is widespread in certain U.S. states,

particularly in areas known for opium cultivation. Similarly, in Rajasthan, opium use has deep cultural and historical roots, driven by harsh living conditions. Research indicates that 8.0% of adult males in rural Western Rajasthan use raw opium, with higher usage rates among men than women.[3]In Rajasthan's rural communities, opium is used to promote longevity and enhance sexual pleasure during social events, weddings, and funerals. Initially restricted to the upper classes, opium use has since become widespread across all social levels.[1] In Gujarat and Rajasthan, opium was traditionally used for therapeutic purposes and was closely tied to caste and cultural practices. However, with the arrival of heroin (brown sugar) in the early 1980s, it began to replace opium and cannabis as the primary narcotic. This shift was influenced by the 1985 Narcotic Drugs and Psychotropic Substances Act, which criminalized opium and led to increased heroin trafficking from Afghanistan through Pakistan. By 2013, Rajasthan had 82 legal opium depots distributing 18,000 quintals of poppy husk to 24,841 registered users. A 2015 Rajasthan High Court ruling required the closure of all licensed opium sales by 2016, which may alter opioid consumption patterns in the state.[3]

Aims

To study the sociodemographic profiles and clinical characteristics of individuals with opium use disorder.

To evaluate psychiatric co-morbidities using various psychological instruments.

Objectives

To determine the socio-demographic and clinical profile of patients with opium use disorder using a semi-structured sociodemographic and substance proforma specifically designed for the study.

To assess the psychiatric co-morbidities among individuals with opium use disorder.

Inclusion criteria

Patients were aged 18 or older, of any gender, and diagnosed with opium use disorder according to ICD-10 criteria.

Patients giving written consent for being part of the study.

Exclusion criteria

Patients with significant medical conditions such as hypertension, thyroid disorders, diabetes mellitus, surgical conditions like hydrocele, haemorrhoids, hernia, or neurological conditions such as stroke, epilepsy, or Alzheimer's disease.

Patients using substances other than opium.

Patients not giving written consent for being part of the study.

Materials and Methods

The cross-sectional observational study was carried out in the Department of Psychiatry at the tertiary care hospital on 40 patients from June 2024 to November 2024 after getting approval of the Scientific and Ethical Committee. It focused on consenting opium users or their caregivers attending the OPD/IPD at the hospital. Socio-demographic data were collected using a specially designed semi-structured proforma that included socio-demographic, clinical, and substance use profiles. The General Health Questionnaire[4] was administered and the severity of psychiatric morbidity was assessed using the Hamilton Rating Scale for Anxiety[5], Hamilton Rating Scale for Depression[6], and Brief Psychiatric Rating Scale[7].All participants were assessed using the above scales after completing 10 days of detoxification and showing minimal or no symptoms of opioid withdrawal. Statistical analysis was conducted under the supervision of a statistician after data collection. Diagnoses were based on ICD-10 criteria. [8]

Results

Table-1: Sociodemographic profile of the study population (n=40)

Characters	n (%)
Age group (years)	
18 – 30	23 (57.5%)
31 – 40	14 (35%)
41 – 50	2 (5%)
>50	1 (2.5%)
Gender	
Male	40 (100%)
Female	0 (0%)
Religion	
Hindu	24 (60%)
Muslims	13 (32.5%)
Others	3 (7.5%)

Marital status	
Married	35 (87.5%)
Unmarried	3 (7.5%)
Separated	2 (5%)
Employment status	
Student	5 (12.5%)
Employed	25 (62.5)
Unemployed	10 (25%)
Education	
Illiterate	3 (7.5%)
Medium and secondary school	9 (22.5%)
Higher secondary	17 (42.5%)
Graduate	11 (27.5%)
Family type	
Nuclear	27 (67.5%)
Joint	13 (32.5%)
Domicile	
Urban	29 (72.5%)
Rural	11 (27.5%)
Family income per month	
< 10,000	13 (32.5%)
10,000 – 30,000	22 (55%)
>30,000	5 (12.5%)

Table-2: Type and route of opioid use (n=40)

Characters	n (%)
Type of opioid use	
Doda-Chura	8 (20%)
Heroin/smack	14 (35%)
Pharmaceutical opioids	7 (17.5%)
Combination of opioids	11 (27.5%)
Route of opioid use	
Injection	11 (27.5%)
Oral	12 (30%)
Inhalation	9 (22.5%)
Combination	8 (2.0%)

Table-3: Psychiatric co-morbidities among opioid dependent patients (n=40)

Characters	n (%)
Psychiatric co-morbidities	
Present	22 (55%)
Absent	18 (45%)
Depression	17 (77.27%)
Anxiety	11 (50%)
Psychosis	2 (9.09%)

Discussion

In our study, 8 patients (20%) were consuming opium in the form of Doda-Chura. In contrast, the study by Mazumdar et al[1] found that the majority of patients (94.1%) were using natural or raw opioids, including opium and Doda-Chura. Similarly, Goyal et al[3] reported that opium was the most commonly used opioid, with 98% of users consuming it at some point in their lifetime, 97% within the last year, and 95% within the last three months.

In our study, 35% of patients were consuming opium in the form of heroin/smack. In contrast, the study by Mazumdar et al[1] reported that 12.6% of patients were using smack, brown sugar, or pharmacological opioids. Similarly, Bhat et al[2] found that 62.16% of patients were using heroin as their opioid of choice. Mohanty et al[9].'s study revealed that 33.8% of patients preferred heroin, while Farhat et al[10] observed that 13% of patients were using opioids in the form of heroin.

In our study, we found that 17.5% of patients were using pharmaceutical opioids. This is similar to the findings of Mohanty et al[9]., where 18.8% of patients were reported to be using pharmaceutical opioids. In contrast, Bhat et al[2] observed a slightly higher prevalence, with 21.6% of patients using these opioids. Farhat et al[10] study reported an even higher percentage, with 32% of patients using pharmaceutical opioids.

In our study, we observed that 27.5% of patients were using opioids in combination forms. In comparison, Mohanty et al[9] reported that 47.5% of patients were using opioids in combination. Bhat et al[2] found that 16.21% of patients were using opioid combinations, while Farhat et al[10] reported that 53% of patients were using one or more opioids in combination.

In our study, 11 patients (27.5%) of patients were using opioids through intravenous (IV) injections, 12 patients (30%) were taking them orally, 9 patients (22.5%) were using them by inhalation, and 8 patients (20%) were using a combination of these methods. Bhat et al[2] reported that 27.03% of patients were taking opioids orally, 32.43% were using them by inhalation, 18.92% were using them intravenously, and 24.32% were using a combination of these routes. Mohanty et al[9] found that the majority of opioid users (48.8%) used a combination of intravenous, oral, and/or inhalation routes, followed by 30% using only intravenous, 20% using only oral, and 1.3% using only inhalation. Farhat et al[10] reported that 35% of patients were taking opioids

orally, 11% were using them intravenously, and 6% were using a combination of routes.

In our study, 55% of opioid-dependent patients had psychiatric co-morbidities. Among these 22 patients, 77.27% had depression, 50% had anxiety, and 9.09% had psychosis. In comparison, Mazumdar et al[1] reported psychiatric co-morbidity in 20% of patients, while Basu et al[11] found it in 13.2% of patients, with mood disorders in 42.2%, psychotic disorders in 27.5%, and anxiety disorders in 16.7%. Mohanty et al[9] observed psychiatric co-morbidity in 77.5% of patients, including 55% with depression, 11.3% with anxiety disorders, and 3.8% with schizophrenia. Similarly, Vivek et al[12] found psychiatric co-morbidity in 76% of opioid-dependent patients, with mood disorders in 36%, psychotic disorders in 8%, and anxiety disorders in 12%.

Conclusion

The study highlights diverse patterns of opioid use and significant psychiatric co-morbidities among opioid-dependent individuals. These findings underscore the need for comprehensive treatment strategies that address both substance dependence and mental health issues.

Limitations

A larger sample is needed for this study with a prospective assessment to generalize the findings. The sample may be gathered from more than one centre.

Financial Support

There was no financial support provided to conduct this study

Conflict of Interest

There was no conflict of interest

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Original Article

Socio-Demographic and Clinical Profile of Patients with Major Depressive Disorder with Suicidal Ideations Attending a Tertiary Care Hospital in Northern India

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ABSTRACT

Background: *Depression significantly impairs daily functioning, productivity, and social relationships, resulting in substantial economic costs, including healthcare expenditures and lost productivity. Depression is associated with more than half of all suicide attempts, and untreated depression significantly increases the risk of suicide.* ***Objective:*** *In previous research methodologies and surveys, there has been more focus on depression and suicide as separate entities rather than combined both even when depression accounts for majority of suicides. So, the present study is aimed to explore the various socio-demographic and clinical characteristics of patients with Major Depressive Disorder with suicidal ideations.* ***Method:*** *The present study was conducted in the Department of Psychiatry, JNMCH, AMU, Aligarh,Uttar Pradesh, India. MDD patients with suicidal ideations were recruited from psychiatry OPD/IPD during the period November 2021 to October 2022. They were assessed on Self-constructed Semi Structured Proforma that included details about socio-demographic and clinical profile, along with psycho-social factors.* ***Results:*** *Majority of patients in the study were young, females, single, Muslims by religion, residing in urban area, literate and employed. Most of the patients belonged to lower middle socio-economic class as per Modified B.G. Prasad classification and living in nuclear family. Around 67% had duration of illness less than 6 months indicating most patients in early stages of depression. Around 70% had some form of identifiable precipitating factor, 45% patients had past history of MDD and 25% had past history of suicidal ideations with 23% having a family history of psychiatric illness.* ***Conclusion:*** *With depression accounting for major cause for suicides, it warrants the need for studies evaluating the profile of patients suffering from Major Depression Disorder having suicidal ideations. A thorough knowledge of profile of such patients can help in preventing suicides.*

Keywords*: Major Depressive Disorder, Suicidal Ideation, Psychosocial Fsctors*

Introduction

Major Depressive Disorder (MDD) is a common psychiatric disorder characterized by persistent low mood, anhedonia, and various cognitive and somatic symptoms. According to the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5), a diagnosis of MDD requires the presence of at least five symptoms over two weeks, including depressed mood, loss of interest or pleasure, significant weight change, insomnia or hypersomnia, psychomotor agitation or retardation, fatigue, feelings of worthlessness or guilt, diminished ability to think or concentrate, and recurrent thoughts of death or suicide.[1]

MDD significantly impairs daily functioning and is a leading cause of disability worldwide. Depression accounts for 7.5% of all years lived with disability globally and affects more than 300 million people worldwide, representing 4.3% of the global population. It makes it one of the most common mental health disorders worldwide and a significant contributor to the overall global burden of disease. Depression not only impacts the mental health of individuals but also significantly affects physical health, social functioning, and economic productivity. The global economic burden of depression is substantial, with costs associated with healthcare utilization, lost productivity, and premature mortality.[2]

The condition is also a significant risk factor for suicide, which claims approximately 800,000 lives annually.[3] Studies indicate that individuals with untreated depressive disorders have a 20% life time risk of suicide. Suicidal ideation and behaviours are particularly prevalent among individuals with MDD, with studies showing that up to 60% of people who die by suicide have a mood disorder at the time of their death.[4]

In India, the suicide rate was reported at 10.6 per 100,000 people in 2014. The NMHS 2016 data revealed that 6% of respondents were at risk of suicide, with the highest risk among individuals aged 40-49 years and urban metro residents. The suicide rate in India is alarmingly high, with over 139,123 suicides recorded in 2019.[5] In 2022, over 13,000 students took their own lives in India, highlighting the severe impact of academic pressure and mental health issues among the youth as per NCRB Report, 2023.

In previous research methodologies and surveys, there has been more focus on depression and suicide as separate entities rather than combined both. Also, depression being one of the most common causes of suicide is a treatable entity. So, reducing or treating the depressive symptoms can also help in terminating the suicidal ideations or attempts, eventually leading to reduce suicidal deaths.

Additionally, several research conducted in India and overseas predict different risk factors for depression. There is a need to obtain data relevant to a particular region, especially in the current environment where depression and suicide both are considered as a major public health concern. So, the present study is aimed to explore the various socio-demographic and clinical characteristics of patients with Major Depressive Disorder with suicidal ideations in a tertiary care hospital of Aligarh, Uttar Pradesh, a northern state of India.

Materials and Methods

The present study was carried out in the Department of Psychiatry, Jawaharlal Nehru Medical College and Hospital, Aligarh Muslim University, Aligarh, India. The study sample comprised of 240 patients with Major Depressive Disorder having suicidal ideation diagnosed according to DSM-5 criteria, who were recruited from Psychiatry OPD/IPD between November 2022 and October 2023. It was a hospital based cross-sectional study.

Ethical clearance from the Institutional Ethics Committee (IEC) of Jawaharlal Nehru Medical College and Hospital was obtained to conduct this study. Written informed consent was taken from all patients. The purpose of the research was explained to them, and surety was given to the participants that their responses would be kept confidential.

Self-constructed Semi Structured Proforma included details about socio-demographic and clinical profile, and psycho-social factors was used.

Inclusion Criteria

1. Subjects aged 18-60 years of any gender.
2. Subjects who met the DSM-5 criteria for Major Depressive Disorder.
3. Subjects who had suicidal ideations.
4. Subjects who gave written informed consent for this study.

Exclusion Criteria

1. Subjects aged below 18 years and above 60 years.
2. Subjects who did not meet the DSM-5 criteria for Major Depressive Disorder.
3. Subjects who had no suicidal ideations.
4. Subjects who did not give written informed consent for the study.

Study procedure

A total of 240 patients with depression and suicidal ideations fulfilling inclusion and exclusion criteria were recruited from Psychiatry OPD/IPD after making the diagnosis of Major Depressive

Disorder as per DSM-5. They were assessed on a semi-structured Proforma, which included socio-demographic details, brief clinical history, physical examination and mental status examination. Various psycho-social factors were also assessed. All the patients were provided with standard medical and psychiatric care irrespective of their participation in study.

Results

Table 1 shows Sociodemographic profile of patients with Major Depressive Disorder with suicidal ideations. The study showed majority of patients were young, in the age group of 18-30 years (42.5%) with the youngest patient being 18 years old and the most senior was 58 years old. In our study, we found higher female preponderance (59.6%) with 47.1% patients being single. Predominantly patients were Muslims by religion (74.5%) with around 56.2% patients residing in urban area.

Most of the patients were educated and labourers by occupation. As per Modified B.G. Prasad Classification, most of the patients belonged to lower middle or lower socio-economic class and were living in nuclear families.

Clinical Profile of Patients with MDD with Suicidal Ideations

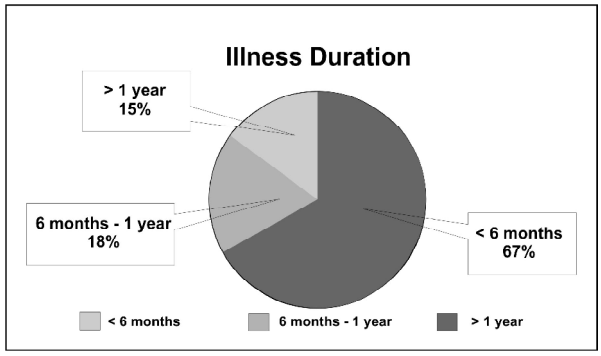

Fig. I: Duration of illness

Figure (I) shows that 67% patients had been experiencing MDD for less than 6 months, 18% of MDD patients had an illness duration of 6 months to 1 year, and 15% had been suffering from MDD for more than 1 year.

Figure (II): Of the patients diagnosed with major depressive disorder (MDD) who had suicidal ideations, 70% had an identifiable precipitating factor, while 30% had no precipitating factors. Most common precipitating factors were maritaldisputes, broken love affairs, family conflicts, job related stress, financial crisis and failure in exams. Less common ones were major life changes, chronic medical conditions, family member having mental illness, and bullying.

Table1-Sociodemographic profile of patients with MDD with suicidal ideations

Socio-Demographic Variables	Frequency (n=240)	Percentage (%)
Age (in years)		
1. 18-30	102	42.5
2. 31-40	84	35.0
3. 41-50	37	15.4
4. 51-60	17	7.1
Sex		
1. Male	97	40.4
2. Female	143	59.6
Marital Status		
1. Single	113	47.1
2. Married	91	37.9
3. Divorced/Widow	36	15.0
Religion		
1. Hindu	61	25.4
2. Muslim	179	74.5
Residence		
1. Rural	105	43.8
2. Urban	135	56.2
Education		
1. Illiterate	16	6.7
2. Primary	39	16.3
3. Middle	56	23.3
4. Secondary	15	6.3
5. Senior secondary	62	25.8
6. Graduate	40	16.6
7. Postgraduate	12	5.0
Occupation		
1. Student	48	20.0
2. Homemaker	48	20.0
3. Farmer	39	16.3
4. Labourer	52	21.6
5. Businessman	18	7.5
6. Unemployed	15	6.3
7. Others	20	8.3
Socio-economic status		
1. Upper	16	6.7
2. Upper-middle	23	9.6
3. Middle	42	17.5
4. Lower-middle	83	34.9
5. Lower	76	31.7
Family type		
1. Nuclear	100	41.7
2. Joint	94	39.1
3. Extended	46	19.2

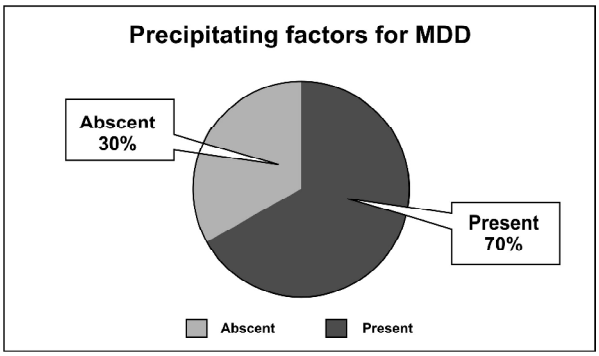

Fig. II: Precipitating factors

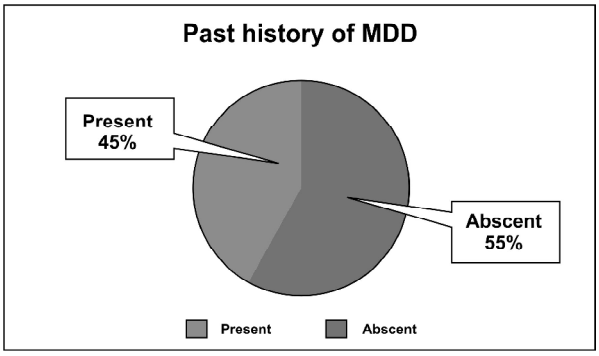

Fig. III: Past History of MDD

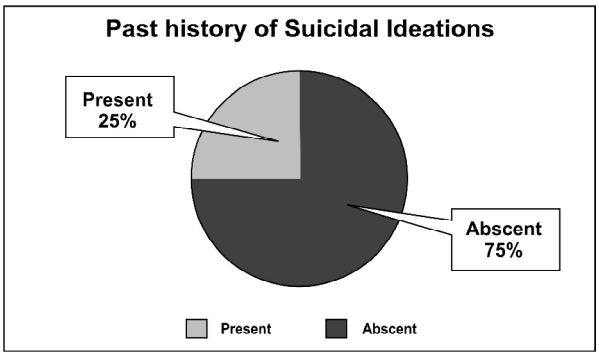

Fig. IV: Past History of Suicidal Ideations

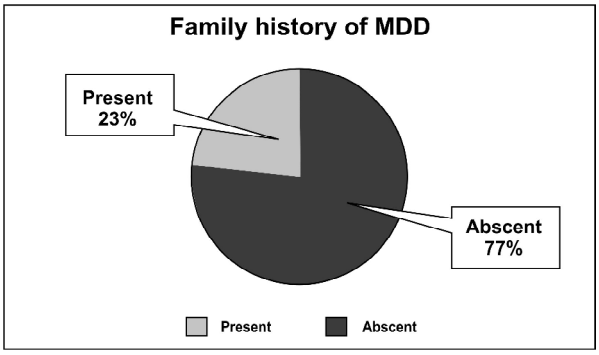

Fig. V: Family History of MDD

Figure (III): Past History of MDD **Figure (III)**: Among the MDD patients with suicidal ideations, 55% did not have a prior history of depression, whereas 45% reported a history of depressive illness.

Figure (IV): Among the MDD patients with suicidal ideations, 25% patients had a past history of suicidal ideations.

Figure (V): Among patients with MDD, 77% did not have a family history of depression, while 23% had a family history of MDD.

Discussion

The study aimed to assess the socio-demographic and clinical profile of Major Depressive Disorder patients with suicidal ideations. Total 240 patients were included in this study after meeting inclusion and exclusion criteria. Most ofthe patients in our studywere in 18-30 years age group (42.5%) followed by 31-40 years (35%). This is in line with the study done by Md RabiulIslam who found approximately 59% patients within an age range of 25 - 44 years.[6] The findings are in contrast with the study done by Arvind BA and his colleagues in 2019 who found the lifetime prevalence of DD was relatively high in 40–49 age group (7.47%).[7]

In our study, there was a female preponderance. Our findings are similar to study done by Neeraj Pawar et al., 2022 who also found depression to be more prevalent in females.[8] Majority of the patients in our studyare single and are Muslim by religion. This is in contrast with the findings of studydone by Gupta et al., 2022 on suicide attempters who found majority of suicide attempters were married (65%) and were following Hindu religion (66.3%).[9]

Most of the subjects in our study were literate, employed and living in nuclear family. They belong to lower middle to lower socio-economic status as per modified BG Prasad Classification. The findings are similar to study done by Riju Niroula and Hari Prasad Upadhyay in 2020 who found that around 58.2% patients belonged to lower socio-economic status. Though most of the patients in their study were illiterate and unemployed.[10]

In this study, most of the patients had less than 6 months of depressive illness (67%), with a smaller percentage suffering for more than a year. This distribution suggeststhat most patients were in the early stages of MDD. Anand et al reported a similar distribution of illness duration, with most participants having experienced MDD for less than a year.[11]

Around 70% had some form of identifiable

precipitating factor. Study done by Sharma et al reported that 78% of participants had identifiable precipitating factors, similar to the findings in this study.[12] Around 45% patients had past history of MDD and 25% had past history of suicidal ideations. Also, only 23% had a family history of psychiatric illness. Rao et al. also found that approximately 30% of participants reported a family history of depression, supporting the current study's results.[13]

Conclusion

Major Depressive Disorder (MDD) is a pervasive and debilitating mental health condition which disrupts the functioning and quality of life of people. Depression is associated with more than half of all suicide attempts, and untreated depression significantly increases the risk of suicide. Suicide is a psychiatric emergency and most of the attempts are preventable as well as avoidable. With depression accounting for major cause for suicides, it warrants the needf or studies evaluating the profile of patients suffering from Major Depression Disorder having suicidal ideations. A thorough knowledge of profile of such patients can help in preventing suicides and encourages an integrated system of interventions at several levels of society, including the person, the family, the community, and the health-care system. There are barely any studies studying the profile of MDD with suicidal ideations, focusing the need for this study. Furthur research are needed in future to confirm the findings ofthis study.

Limitations

This is a single hospital-based study. So, results cannot be generalized to the whole population. Also, sample size was not calculated and a rough estimated sample was taken as per convenience

1. In this study, suicide attempts have been restricted to adult population (18-60 years).
2. Since the study included patients having MDD with suicidal ideations, a genuine discussion could not be framed as most of the studies conducted in India and worldwide either have included depressive patients or suicidal patients and not both.

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Original Article

Functional ability in children on Autism spectrum disorder – A qualitative analysis

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ABSTRACT

Objective*: To qualitatively assess functional ability in autism spectrum disorder.* ***Method****: The primary caregivers of 10 children with autism spectrum disorder were recruited. The severity of disability in children on autism spectrum was assessed on ISAA (Indian Scale for assessment of Autism), [based on Childhood Autism Rating Scale (CARS)]. To assess functional ability of these children, in-depth interview of parents using Semi structured interview schedule based on International Classification of Functioning, Disability and Health: Children and Youth version (ICF-CY). Grounded theory approach was used for the qualitative analysis, done manually by the researchers.* ***Result:*** *The mean age of the sample was 4.67(1.95) years. Seventy-three percent of the sample consisted of male participants. The mean ISAA score of the participants' children was 102.67(16.31). There were substantial functional abilities, which were categorised under 10 themes-Activities of Daily living; Behaviour; Cognition; Communication; Emotion; Memory; Analytical abilities; Sensory behavior; Social abilities; Savant abilities.* ***Conclusion****: The current study is among the very few studies published that focuses on strengths and abilities in autism spectrum disorder rather than disability.*

Key words*: Autism spectrum disorder, Functional abilities, Qualitative, ISAA.*

Introduction

As per DSM-5,[1] Autism Spectrum Disorder is a neuro-developmental disorder with deficits in the domains of social interaction across settings, social-emotional reciprocity, and difficulties in non-verbal communication. Approximately 1.5% of children between the ages of 2 and 9 are diagnosed with Autism Spectrum Disorder (ASD).

Various co-morbidities like ADHD (20-85%), intellectual disability (50–80%), epilepsy / seizures (30%) can occur in autism spectrum disorder.[2] These co-morbidities decrease the functional ability and accentuate the problems associated with autism spectrum disorder, further limiting the limited independent living of the individual, adding to the dysfunction.

Despite these difficulties, children on the autism spectrum present with some specific skills such as – sharp memory, calculation, musical ability, mechanical skills etc known as 'savant skills'. Besides using savant skills, some behaviors peculiar to autism spectrum disorder like special interests leading to oceans of knowledge or skill in a particular area, may enhance the abilities in the autistic children.[3,4]

The International Classification of Functioning, Disabilityand Health (ICF),[5] developed by the World Health Organization (WHO), with the aim of creating a common platform valid globally, enabling assessment of individual functioning using a bio-psycho-social framework is quite comprehensive tool to assess functioning.[6] To improve the specificity for children, the specific ICF guidelines for children and youth [7]were developed, which were subsequently specifiedas per age .While the Comprehensive ICF Core Set for autism spectrum disorder contains 111

categories, a brief ICF Core Set was developed for the different age groups with 79 categories. Optimizing positive participation is considered the most important treatment outcome for most children[8] and has been evaluated for use in individual child support planning and program development.[9] There is an increasing realization that service delivery based on functioning and participation considerations (rather than diagnostic labels) is more appropriate in a system supporting individuals with disabilities.[10]

As these strengths can be crucial in helping individuals compensate for difficulties, leading to a more productive and fulfilling life as evidenced in existing literature.[11-14] The focus on strengths or abilities in addition to appropriate individualized early intervention plancan further help autistic children to maximize their potential. Hence, the study was conducted for the assessment of functional ability in autism spectrum disorder in a limited resource setting like India.

Methods

***Study design*:** It was a cross sectional, exploratory study, that included semi structured interviews with Grounded theory approach for analysis.

Subjects and sample size: Primary caregivers of 10 autistic children between 3 to 10 years of age were recruited for the study after obtaining assent and written consent. Primary caregiver having any clinically diagnosed major mental illness or Intellectual disability was excluded.

Development of interview guide: To assess functional ability in autism spectrum disorder, comprehensive in – depth semi-structured interview schedule was developed, based on the various domains of ICF–CY i.e. Body functions, Activities and Participation, and Environmental factors that were found to be relevant to probe functional ability of the children with autism spectrum disorder from parents. A total of 24 questions pertaining to specific abilities in participants were written mostly based on domains of ICF-CY as depicted in Table 1 (in supplementary data). To maintain the essence of conversation, Hindi translation of the draft was done as the common language of use in this region is Hindi.

***Procedure*:** After obtaining the permission from the Institutional Ethics committee, Government Medical College and Hospital, Chandigarh (vide letter number GMC/IEC/2018/193), a total of 10 children on autism spectrum in the age range of 3-10 years alongwith their primary caregiver (mother/father) coming to the child psychiatry OPD, fulfilling the inclusion and exclusion criteria were enrolled for the study. Informed written consent from the caregiver and assent from the children was obtained and socio-demographic details were noted. To assess the severity of disability in children on autism spectrum, ISAA (Indian scale for assessment of autism) was administered. ISAA was approved by Government of India in 2009 to assess the severity of autistic symptoms and is gazetted as the scale to quantify disability in Autism in India. ISAA was based on Childhood Autism Rating Scale (CARS) with 93.3% sensitivity and 97.4% specificity.[15] The items of ISAA are rated from 1 to 5 and a score of <70 indicates no autism, 70-106 (mild autism), 107-153 (moderate autism), and >153 (severe autism).[16]

To assess functional ability of the children with autism spectrum disorder, interviews were carried out by researchers in a quiet room with proper lighting and seating arrangements. Each interview took about 30-45 minutes. The interview was simultaneously audio recorded by researcher[11] and audio files were stored on researcher's personal laptop for further analysis. The audio recordings of each of the 10 participants were then transcribed verbatim by the researcher using the Software Microsoft Office Word 2007. The transcripts were cross-checked by Reseacher-2 and then saved as word documents ensuring confidentiality throughout.

Data analysis

Quantitative part: The socio-demographic variables were described quantitatively using frequency distributions by calculating proportions and percentages. ISAA variables were described using mean and standard deviation.

Qualitative part: Grounded theory approach was used for the qualitative analysis as itavoided making assumptions and instead adopted a more neutral view of human action in a social context and seemed well-suited to build a thorough understanding of functioning in autism spectrum disorder from caregivers' perspective. Grounded theory is a process by which theory is generated from the analysis of data. Theory is not discovered; rather, theory is constructed by the researcher who views the world

through their own particular lens[17].All the researchers were part of the grounded theory approach which was done manually without any software .

A six- phase approach[17] was followed as:

GROUNDED THEORY APPROACH

Phase 1. Purposive sampling

Purposive sampling relies on the researcher's judgment when identifying and selecting the individuals, cases, or events that can provide the best information to achieve the study's objectives. It was done to select participants for face to face in depth semi interviews. It was ensured that participants from different socioeconomic status, residence and educational status were included.

Phase 2. Constant comparative analysis

The constant comparative technique was used to find consistencies and differences, with the aim of continually refining concepts and theoretically relevant categories. Each interview transcript was read and re-read by researchers to become familiar with the data as a whole. To make sense of the data, preliminary ideas were captured and initial codes were generated. Initial codes were then compared to each other to avoid repetition. Codes were then collapsed into categories. In this process, comparing of codes in transcripts was done.

Phase 3. Memoing

Memos provide detailed records of the researchers' thoughts, feelings and intuitive contemplations. Throughout the study, the authors wrote extensive case-based memos and conceptual memos. After each interview, the authors wrote a case-based memo reflecting on what was learnt from that interview. They contained the interviewer's impressions about the participants' experiences. The authors used these memos to record thoughts about the meaning of codes and in these memos, made comparisons between data, cases and codes in order to find similarities and differences.

Phase 4. Initial coding

In initial coding, repeated reading of the transcripts was done in an active, analytical and critical way which paved the way for vivid understanding of the data. Each transcript was given full and equal attention, as a result, the codes that had similar meanings and formed the basis of overt repetitive or reoccurring patterns were identified across the entire data set. Thus, eliciting a list of 77 initial codes. These initial codes were initial observations, preliminary in suggesting that data productive grounds for further analysis. The initial codes that were elicited, were used as coding prompts and memory aids. This formed the part of next process i.e. focused coding.

Phase 5. Focused coding

In focused coding, the initial codes that were extracted were written manually. Every new pattern that emerged was also written along the initial codes. A few were also coded more than once, as they seemed to fit into two or more similar patterns. Through this, the 77 initial codes were organised into smaller meaningful groups or secondary themes. Finally, a total of 57 focused codes were elicited, which took 6-7 hours over 3-4 sittings. The focused codes that emerged are depicted in Figure 1.

Phase 6. Theoretical coding

This is the process of making sense of evidence and construction of knowledge. After the authors devised the provisional focused codes, the focused codes were reviewed in relation to the coded data and entire data set.

The analysis across these phases did not progress in a linear fashion. Instead, it involved constant moving back and forth throughout the phases as and when needed.[18]

Results

1. *Sociodemographic and clinical profile of participants*

The mean age of the children was 5 (2.05) years (range 3 - 10 years) [7(70%) - male and 3(30%) females]. Eight participants (80%) were mothers, and 2 (20%) were fathers, as depicted in Table 1.

2. *Autism spectrum disorder symptom severity on ISAA of autism subjects*

The severity of autistic symptoms assessed at baselineshowed 6 children (66.6%) with mild autism spectrum disorder and 4 (33.3%) with moderate autism spectrum disorderwith a mean ISAA score of 101.2 (17.94) as shown in Table 2.

3. *Assessment of functional ability*

As a result of grounded analysis,many focused codes were narrowed down to formulate overarching or theoretical codes related to functional ability like "brushing", "eating", "dressing", "maintain hygiene",

Table-1: Sociodemographic characteristics of the sample

Sociodemographic parameter		Participants* (N=10)
AGE [**Mean (SD)**]		4.67 (1.95)
		Number (%)
Gender	Male	7 (70)
	Female	3 (30)
Locality	Urban	9 (90)
	Rural	1 (10)
Religion	Hinduism	9 (90)
	Sikhism	1 (10)
Family type	Nuclear	6 (60)
	Joint	3 (30)
	Extended	1 (10)
Residence	Chandigarh	6 (60)
	Punjab	2 (20)
	Haryana	1 (10)
	Himachal Pradesh	1 (10)
Monthly income	3501–7000	1 (10)
	7000–10,000	1 (10)
	10,001–200000	8 (80)

Participants*- parent of child with autism

Table-2: Mean score for each domain of the ISAA of the subjects*

Indian Scale for Assessment of Autism (ISAA)	Mean (SD)
Social relationships and reciprocity	32.37 (8.23)
Emotional responsiveness	10.37 (3.93)
Speech-language & communication	23.20 (4.21)
Behaviour patterns	16.30 (8.48)
Sensory aspects	11.17 (3.53)
Cognitive component	9.27 (1.17)
Total	102.67 (16.31)

Subject* – child with autism

"sleep" and "cleaning". All these were given one broader code called Activities of Daily Living (ADLs) i.e. visibly separate codes formed one code.

In all, ten theoretical codes emerged: (1) ADLs; (2) Behaviour; (3) Cognition; (4) Communication; (5) Emotion; (6) Memory; (7) Analytical abilities; (8) Sensory behavior; (9) Social abilities; (10) Savant abilities.

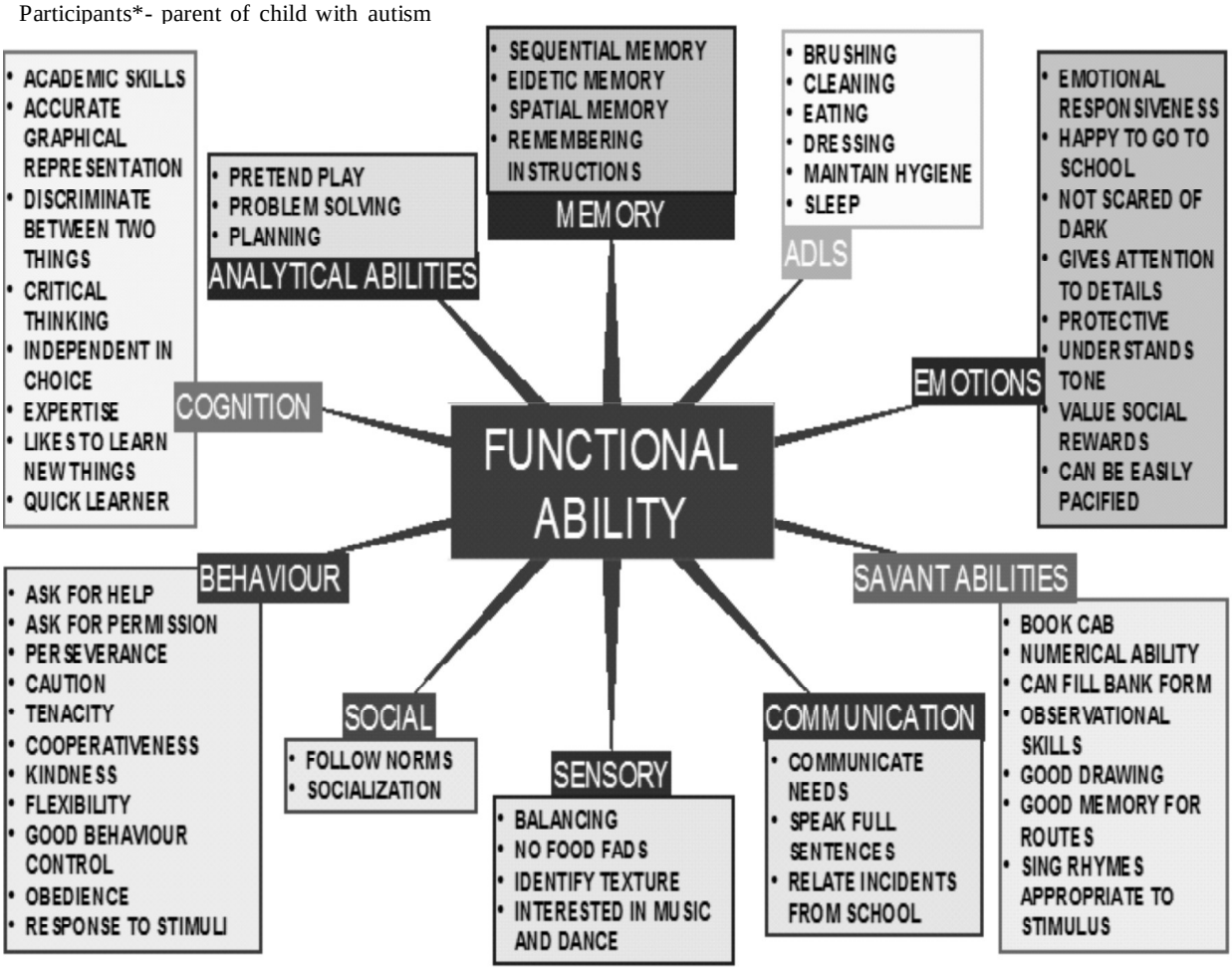

Figure 1- Focused and Theoretical codes.

These theoretical codes had the focused codes inherent in them and were viewed as most important and comprehensive in determining the functional abilities in autism spectrum disorder, shown in Figure 1.

[* Object too big for pasting as inline graphic. | In-line.EMF *]

Discussion

Relatively little is reported about the functional abilities of children with autism spectrum disorder, as the majority of earlier studies focused on the disability.[19,20] This age group is the most critical for early intervention, and highlighting the functional abilities of children with autism is akin to the ray of hope that these caregivers yearn for desperately. With the advent of ICF and core sets of ICF for autism spectrum disorder, quantitative tools for assessing functioning in people with Autism Spectrum Disorder are underway.[21] In the present study, the authors worked towards qualitative assessment of functional abilities in Autism Spectrum disorder with ICF -ASD as the scaffolding.

As shown in the literature, a subset of children on the autism spectrum had normal or above-average abilities or were exceptionally gifted in specific areas, despite being impaired in others. These children usually present later as they appear otherwise intelligent in their daily routine and academics.[22] Also, it has been seen that various behaviors of the children on the autism spectrum improve with age. The participants whose caregivers were interviewed were associated with the Autism clinic being run by the department and were pursuing various therapies as well. Hence, an attempt was made to understand the changethat occurred in their behavior with time.

ADLs (Activities of Daily Living)

Activities of daily living (ADL) are fundamental to participation in daily life impacted by Autism spectrum disorder.[23] The ADLs attribute the ability of children to participate in activities such as personal hygiene, dressing, household chores and money management-essential prerequisites for self-sufficiency and autonomy.

In this study, the authors analysed ADLs of brushing, cleaning, eating, dressing, maintaining hygiene and sleep following the age group of the participants.

Subjects 1, 2, 6, 9 and 10 (50%) showed less dependence than the other participants in their ADLs of brushing, bathing, eating, dressing and these were appropriate to their age. Also, Subject 6 (aged 3 years) had shown improvement in brushing as earlier she used to brush only with her mother's assistance but now she had started brushing with prompts from her father as well.

Subject 1 (aged 6 years) engaged in cleaning dishes in the house with enthusiasm, appropriate to the age.

Subject 1 (6 years); 8 (8 years) and 9 (8 years) adequately ate food on their own. Subject 8 always finished the meals irrespective of the quantity of food.

Fifty percent of the subjects were able to dress up on their own. In Subject 8, insistence for a particular dress, that was earlier present, had diminished. These are consonant with findings of study by Bal et al and Smith et al[23,24] who reported improvement in ADLs with time from 2 -21 years in autism spectrum disorder.

All participants in this study had a regular sleep cycle which the caregivers reported to be a boon as compared to other children despite sleep problems being quite common in autism spectrum disorder ranging from 40%-80%.[25]

Behaviour

The majority of the studies mention that children on the autism spectrum exhibit problematic behaviour commonly.[26,27] In the current study, the authors analysed the behaviour from a different perspective, more as a strength than a dysfunction in autism spectrum disorder. The authors included asking for help, asking for permission, cautious behaviour, tenacity and resilience, cooperation, kindness, flexibility, reasonable behavioural control, obedience, perseverance and response to external stimuli- as some defining codes for behaviour through excerpts 3-8, 16-19 and 22.

Subject 8 in the study was self-motivated to memorise multiplication tables independently, showing tenacity and resilience. Subjects 1, 6 and 8 also tried to comfort others whom they saw were in distress and especially towards other children of their age, neighbours or family members – highlighting the ability of kindness.

Subject 4 used to talk very much; he would go

into great detail about everything - but gradually improving on this, he would communicate appropriately-eliciting gradual attainment of reasonable behaviour control.

Subject 1 once transferred money to a cab booking application, for which his mother scolded him; thereafter, he always asked his mother to check the amount to be moved beforethe transaction, a strength (at the age of 6 years) - highlighting asking for permission, cautious behaviour and flexibility.

Treffert[28] concluded that children on the autism spectrum are unable to recognize the danger to themselves and show less fear when confronted with something scary, often running into traffic or trying to catch fire.[28] The findings of our study do not resonate with the same as the children were able to take safety precautions in hazardous situations. They had the potential to avoid risks that could lead to physical injury. Like Subject 8 always drove her bicycle on the left side, and whenever anyone honked, she would stop and go to a safe place nearby. The subjects who had younger siblings exhibited the ability to safeguard their siblings from potential sources of harm and were protective of them as per their age.

It is reported that children on the autism spectrum have rigid, **fixed ideas and behaviour,** due to which they do not comply with instructions given to them.[29] 70% of subjects in semi-structured interviews reported compliant behaviour in this study. They accepted and adhered to the instructions by their parents i.e., one of the study's significant findings.

Cognition

Cognitive impairment is known to be present in 50–70% individuals on autism spectrum.[29] Ranging from known deficits in social cognition and executive functioning to overt excellence in intellectual skills in a selected few, autism spectrum disorder has shown a wide variance across cognition.

The current study included critical thinking, academic skills, accurate graphical representation, ability to differentiate, independent in choice, expertise and likes to learn new things – as domains to discuss cognition in autism spectrum disorder through the excerpts 8-15.

In the study, subject 1 had understanding that induction of vomiting is important when his friend swallowed newspaper and also, suggested to go to hospital which is reflective of contextual knowledge as well as problem solving-a strength at his age i.e. 6 years.

In this study, 40% showed academic skills in terms of remembering multiplication tables like Subject 4 and 8 memorised tables upto10, were able to give correct response for dodging tables, were able to recognise and write different alphabets without any confusion and complete the workon their own without any guidance. Subject 1 had academic skills beyond his age as he did not need any assistance in his school work or examination at the age of 6 years. Other cognitive abilities included the use of the contextual knowledge in daily life and representing spatial properties of objects like subject 6 was able to draw lollipop, banana etc at the age of 3-4 years.

Subject 5 (aged 4 years) could distinguish between his own possessions and those of others. Similarly, Subject 6 could distinguish between the sounds of aeroplane and helicopter proficiently. Subject 8 could choose dress that she feels is best for her, showing her independency in choice and selection. Subject 1 acknowledged his mother's feedback in filling out the bank form and repeated the process correctly the next time, demonstrating his expertise. Subject 6 showed eagerness to learn about new things always asking her mother about different sounds, appropriate to her age i.e. 3 years.

Social communication

Meaningful speech does not develop in 30–50% cases of autism spectrum disorder, language, when develops, is either delayed or deviant.[29]

This study included focused code of verbal/non verbal communication, ability to speak full sentence, communicating needs and relate incidents from school in the domain of Social Communication.

Many autistic children develop some speech and language skills, but their development is usually uneven. For example, they may quickly develop a strong vocabulary in a specific area of interest; some may be able to read words before the age of five, but may not comprehend what they have read; and they frequently do not respond to others' speech or to their own names.[29] In our study, 4(40%) of the 10 Subjects (Subject 1 : 6 years old, Subject 3 : 6 years old, Subject 4 : 3 years old and Subject 9 : 6 years

old) were able to communicate well and also tell their parents about events that happened in school or show their toys to parents. They were able to speak full sentences without any difficulty, appropriate to age.

For the communication, a characteristic behaviour of many children on autism spectrum is to use another person's hand mechanically to indicate the desired object, often called 'hand over hand' pointing.[3] Contrary to this, 6 out 10 Subjects' caregivers' in this study, reported that their child expressed or communicated to caregiver about their needs, either verbally or non- verbally and this ability was appropriate as per their age i.e. 3 years (Subject 4 and Subject 5), 6 years (Subject 1, Subject 3 and Subject 9) and 8 years (Subject 8).

Emotions

Both parents and clinicians have long emphasized the important role played by maladaptive emotional responses in autism spectrum disorder which might be a result of dysregulated emotions[30] expressed as irritability, poor anger control, temper tantrums, self-injurious behavior, aggression, and mood dysregulation.[31,32] In addition, there is an increasing recognition of the impact of severe emotional disturbances in autism spectrum disorder,[33] and initial empirical findings suggest that maladaptive emotional responses may contribute to impaired functioning[34] consequently affect long-term outcome.[35]

This study included codesfor emotions - can be easily pacified, emotional responsiveness, happy, happy to go to school, not scared of dark, protective, give attention to details, understand tone of voice and value social reward.

Understanding of self and others' emotions is one of the difficulties children with autism spectrum disorder usually face. In our study, three subjects (30%) exhibited emotional responsiveness. Subject 6 could identify the angry tone of caregiver and was able to modify her behaviour accordingly.

It was also observed that if Subject 5 (4 years) was injured and crying, he would stop if his mother hugged him, showing that he could be easily pacified. About half of the participants mostly remained happy.

In our study, Subject 8 tried to protect her siblings from potential sources of harm and was protective of them, appropriate to her age i.e. 8 years. Subject 3 in the study would tell his mother regarding the star given by his teacher and he preferred being honoured by his teacher over material rewards or reinforcements, an ability at his age i.e. 6 years.

In the present study, subjects were able to share their joy with others, a finding inconsistent with available literature that showed limited sharing of enjoyment with others.[28,29,36] Not being able to understand, respond appropriately or use gestures or facial expressions[37-39] are common in autism spectrum disorder but participants in our study were able to understand the facial expressions and tone of voice of their parents.

Subject 1 in the study was able to carry out a job meticulously with great care and attention to detail. For instance, he washed utensils very thorougly and ensured them to be completely clean.

Memory

Impairments in cognitive functioning[40] including disrupted memory functioning are commonplace in autism.[41-42] Meilleur et al.[11] suggested that more than 70% of children with autism spectrum disorder had good memory.

This study included sequential memory, remembering instructions, eidectic memory and spatial memory as the codes to evaluate memory.

Good visuospatial memory was also exhibited by the participants in this study like subject 6 exhibited good learning with music and dance as she could remember exact steps of dance and background music of a song which she saw long backability at her age i.e. 3 years.

Subject 1 was asked to slow down his tone in ATM; he remembered it and followed it on subsequent visits. Subjects 4 and 8 were seen to draw an exact image on paper from their memory.

Subject 3 had sequential memory as he remembered three television advertisements in the exact sequence of relay, a strength at his age i.e. 6 years. These abilities , consistent with other studies[28,43,44] though peculiar to autism, aid in better functioning in day to day life.

Analytical abilities

The executive functions,in particular planning skills, show an atypical developmental trajectory resulting in planning deficits in autistic children.[45,46]

This study included problem solving and planning as codes for analytical abilities.

Managing problems or problem solving develops by the age of 5-6 years in neurotypical children and the participants in the study were able to figure out the solution to the particular situation like when his friend swallowed a coin and newspaper bits, Subject 1, told that he needs to be taken to hospital and called for help. Also, he could direct the customers to dairy to get milk.

Subject 4 was not only able to figure out where his mother hid the water pipe but he also took it out and played with it.

When Subject 6's mother asked for a bowl to give her snack, then she herself went to kitchen and found the bowl from the cabinet. This ability is also a strength at her age i.e. 3 years.

Subject 8 in the study, participated in planning to decide the appropriate school for the younger sibling, anability appropriate to her age i.e. 8 years.

These abilities empower autistic children with better functioning.

Social abilities

The social skills is one of the core deficits in autism spectrum disorder.

This study analysed social ability as - following normsand socialization.

It was found in various studies that children on autism spectrum present with deficits in social interaction and decreased or absent non-verbal behaviours.[28,29,47-48]

Children on autism spectrum often like to remain alone. However, in the present study, desire to socialize was present in 7 out of 10 subjects and they showed good social skills. They showed eagerness to interact within their peer groups on their own, often initiating such interactions and also, greeting elders on their own. Subject 6 was able to follow the regulations and norms of one's religion and religious place. She was seen to be able to express herself without being prodded by elders and also didn't hesitate, a skill at her age i.e. 3 years. Subject 9 (aged 6 years) despite difficulty in dance performance, enthusiastically participated in a dance event organized by his class group. It shows he follows norms of his group, appropriate to his age. Subject 10 tried to mingle with his elders when they visited his family and these were appropriate to his age. Subject 7 showed improvement in her socialization as her eye contact improved and she also started to mix up with her classmates. Other participants showed care and concern for their friends and siblings.

Deficits in social behavior is a core feature of autism, many a times it is presumed as complete absence of socialization or desire to socialize. However, as seen in the present study, though there are impairments in social behaviors, the children could display many age appropriate social behaviors after undergoing therapy.

Sensory behaviour

Atypical sensory and repetitive behaviors are defining features of autism spectrum disorder.[49] Recent estimates of prevalence of sensory symptoms range from 69% to 93% in children and adults with autism spectrum disorder.[50,51] Contrary to this, our study found minimal abnormal sensory behaviors in participants.

To analyse the sensory behaviour, this study included the focussed codes - food fads, identifies texture, good balancing skills and interest in music and dance.

Many childrenon autism spectrum are quite selective about their meals but nearly all subjects especially subject 7 could eat a variety of foods and he always finished his school tiffin even when his mother gave him two.

Subject 6 was able to identify the texture of the cloth and also she expressed to her mother that her dress was pleasingly soft to touch at age of 3 years. Also, she observed the dance performance with music played simultaneously and was able to appropriately recall it several days later.

As per the literature, children on autism spectrum have difficulty performing skilled movements[52] and have motor disorders including poor coordination, and delayed learning of complex motor skills.[53,54] But in contrast to these findings, 2 subjects in the current study were able to learn skating and cycling in less timeof 1-2 days. They were also able to balance them properly and this finding is consistent with other studies[55,56] that suggest oversensitive autistic children have excellent balance. Thus, balancing here is a strength of these children.

Savant abilities

A recent study by Meilleur et al. 2015[11] suggested that more than 70% of children and adults on autism spectrum had a special isolated skill in memory (52% of the sample), visuo spatial abilities (32%), calculation, drawing or music (about 17% for each area).

In the current study, the savant abilities were inducted from – can book cab, remember full sequence of credit card numbers, can fill bank form, good observation, good drawing, good memory, can sing rhymes related to particular stimuli.

Subject 1 exhibited savant abilities in terms of booking cab on mobile app without any guidance; noticing things very precisely, even those not immediately relevant and guiding others by using the same information (he could download and install the cab booking application and the money wallet application in the phone of the neighbour) and ability to fill bank form properly, these abilities were strengths at his age i.e 6 years. He was able to remember credit card numbers and the respective passwords of other family members' cards, which was regularly used by his grandparents in view of their failing memory. Studies that reflected superior mathematical and numerical abilities in autism spectrum disorder[57,58] support these findings. Participant 8 had ability to draw 3 dimensional images–skill at her age.She could draw things like cartoons, just by seeing them only once, that too without the use of eraser; a finding consistent with earlier studies.[43,59] Subject 6 was able to relate things and could sing rhymes appropriate to a particular situation at the age of 3 years which is certainly a strength at her age, as relating things to appropriate context develops upto the age of 6 years.

Savant abilities are seen in autistic children, leading to increase in functional abilities. Similar reports were shared by parents in the current study.

This study provides useful information towards exploring and understanding the functional abilities in autism spectrum disorder after being involved in the Autism clinic. Many of these findings are not present at baseline but the crux is that Autism is not just disability. This study is first of its kind to highlight that when viewed and practised in the right manner, atleast some of the disability and dysfunction in autism can strengthen not just the afflicted person but make life worth living for their caregivers, who otherwise are prey to burnout and tumultuous life .

However, there are some factors that may limit the generalisability of these findings. First, the study was conducted in one, hospital service so is not widely generalisable. Furthermore, a recruitment bias may pertain; participants in the discussions were already attending the Autism parents' group being run by the department as well as availing services and therapies for autism and some had attained improvement in due course.Like prior studies of parental experience of autism spectrum disorder, our study disproportionately represents the experiences of mothers (8 out of 10).

The study also has a number of strengths. This is a qualitative research that focusses on the functional abilities of children on autism spectrum. As the sample of the study represents a large geographical area, and authors have focussed on the subtleties of data to have enhanced level of detail, hence this study generates comprehensive and authentic data.This study provided important insights into the abilities of persons on autism spectrum wherein most of the studies aim to explore the disability or comorbidities. This study focuses on operationalizing the concept of functioning from the International Classification of Functioning, Disability, and Health (ICF)[7] As most people on autism spectrum and related disabilities live in low- and middle-income countries or other low-resource environments where the functional consequences of a disability may be signiûcantly affected by available skills, resources, environmental support systems, using ICF, having a global perspective on functioning in autism spectrum disorder (through its core sets for autism spectrum disorder), for assessment of functioning, is a strength of the study.

Conclusion

The current study is among the few studies in the published literature that beacons to strengths and abilities in autism spectrum disorder rather than disability. Various abilities were found in the participants of the study that were broadly captured by 10 theoretical codes. These abilities whether appropriate to age or strength or skill at that particular age can help children on autism spectrum to lead a much less supported life as is predicated in the

literature. The parents and caregivers of autistic children seem to commonly experience caregiver burnout and a less supported or unaided life for their children is not a conceivable notion. The findings of this study have diagnostic, educational and prognostic value. Clinicians should evaluate special abilities during the diagnostic procedure and can inform parents regarding the possible, more favorable outcome when those skills present. Educators can use the special expertise demonstrated by the child in a specific developmental area in the educational curriculum, to improve socio-communication skills and daily life functioning. As cognitive abilities enable better learning and acquisition of social and adaptive skills in different environments, the recognition of these abilities can help promote the social status of these children among their peers as well as strengthen the hope of the parents in the cyclone of disability. The authors urge the readers to focus on the abilities of autism spectrum disorder, and efforts should be made to strengthen these abilities and use the therapeutic approaches judiciously.

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Supplementary data

Table-1: Questionnaire developed for the semi-structured interview

1	Please tell me about his/her strengths?
2	Tell me a little about your home, who lives at your home?
3	How does he/ she get along with brothers/sisters?
4	Does he/ she have friends?
5	Does he/ she seem to want to have friends?
6	How does he/ she get along with his/her friends?
7	How does he/ she react to other children?
8	Does your child greet you/elders in any way when he/she sees you/others? If yes, how?
9	Does he/ she attempt to involve you in something he/she is doing or get involved in something you are doing? If so, how?
10	Does your child bring objects over to you to show you something?
11	Does your child try to attract your attention to his/her activity?
12	What does he/ she like to do during his/her spare time?
13	Is he/ she involved in any extracurricular activities?
14	Tell me about (his/her: Toileting, eating, dressing, Grooming (brushing teeth, hair, taking a bath)
15	Does your child able to communicate his /her needs?
16	What does your child‘s usual mode of communication?
17	Does your child follow instruction given to him/her?
18	How well does he/ she seem to understand things that are said to him/her?
19	Does he/ she able to manage his/her behaviour?
20	Does your child pretend play?
21	Does he/she has any kind of unusual memory?
22	Does he/she shows appropriate emotions?
23	Does he/she has proper functioning of sensing temperature, vibration, pressure?
24	Does he/she aware of risks that can lead to physical injury or harm?

To further clarify each of the ten themes, we have provided the excerpts below.

Excerpt 1

‘She washes her hands before eating without being reminded’

The above excerpt shows that participant 8 has the ability to maintain **ADLs** i.e. Maintaining hygyiene by cleaning her hands before eating and knows when to do so.

Excerpt 2

‘He sleeps at 8-8:30 in the night.. wakes up at 7:00am .. to go to school… sleeps comfortably all night .. doesn’t sleep during the day’

The excerpt 2 show that participant 6 **sleeps** well and has no sleep related problems (otherwise commonly found in autism spectrum disorder).

Excerpt 3

‘When he wants to book a cab then he will keep on asking for it throughout the day. But he will never book without my permission. He will never confirm and at last when I will say yes, do it, get the payment checked by me only then, he will go ahead ... as one day he did not get it checked, and on that day a high bill was charged, after that incident he always ask me to check rupees.’

This shows ability of the participant to ***ask for permission*** and also reflects that he is very **cautious** in his activities.

Excerpt 4

‘When I go to ATM, I had explained it long time ago to speak in low tone, so now when he has to speak, he always speaks in low tone, would say ‘give me your ear, only then I will whisper in the ear’..

The above excerpt shows that participant 1 can **remember and follow the instructions** and he is **cautious** about his activities.

Excerpt 5

‘She is possessive for her younger sister. We planned to admit the younger one to the play school but she refused , saying that since she is not going to be in that school ... yes we will go to the

same school ... so that I can take care of her'

The above excerpt indicates that the participant 8 has good **planning** ability and also, she is **caring** and **protective** for her younger sibling.

Excerpt 6

'He has no routine as such. He can do anything at any time… there is no systematic way that you can determine what activity he will do next… he is flexible in his activity schedule'

This shows the **flexible** behaviour of the participant as opposed to the norm of rigidity in autism spectrum disorder.

Excerpt 7

'If I wake him once, he will get up and there is no need to call him again, he will get up and go to the toilet and then will ask for milk'

The excerpts 13 showed the **compliant behaviour** of the participant and adherence to routine

Excerpt 8

'One day his friend swallowed the newspaper, on which he told him, now he would need to go to PGI (a hospital), and also told to vomit it quickly.'

In the above excerpt, participant 1 is using his **contextual knowledge (critical thinking)** and providing the **proper solution to problem**.

Excerpt 9

'The teacher also says that she didn't have to put much effort for him unlike the other children of the class. The teacher gave me feedback that during examination, he was the only one who had completed his exam on his own, he did not need any support'.

The above excerpts reflect on the **cognitive ability** of the participant 1 and Participant 3 i.e their good **academic skills.**

Excerpt 10

'She remembers tables very well like if we still ask her randomly about tables, she will give a correct answer comfortably up to a table of 10. So now she started to say that I will learn multiples of 11 now… I will learn multiples of 12'

In the above excerpt, participant 8 is good at her academic skills i.e. her cognitive ability. Also it reflects her confident **behaviour** that she can learn new tables and that she is **interested and capable of learning new things** i.e. **her cognitive ability**.

Excerpt 11

'She will make a dot on the paper and would say..."Mamma this is lollipop"... Then If I say that "this is not a lollipop"... then she will draw a line under it and then will say this is lollipop ... that means she has started to draw things… like she will make an oval shape with eyes on it and will say " this is potato".

The above excerpt shows the **cognitive ability** of **accurate graphical representation by** the participant 6.

Excerpt 12

'He never brings notebook of others at home like other children do and by chance, if it occurs then he will know that the notebook is not his'

Excerpt 12 shows the ability of participant 5 to **differentiate and recognise his own things** from others reflecting his **cognitive ability.**

Excerpt 13

'While driving him from school, I started to teach him in playful way while on road, like I will ask two times one are? Then he would answer it… two and sometimes he would ask two times two are … then I would answer him… then I asked him four times four are.... in this way, now he was able to do dodging upto table of ten… in few days.'

The above excerpt shows that participant 3 is **quick learner,** reflecting on his **cognitive ability**.

Excerpt 14

'If an aeroplane flies by, then she will come and will tell me. She will be able to differentiate between the sound of the aeroplane and the helicopter'

The excerpts show the ability of the participant **to discriminate between two similar sounds,** reflecting **cognitive ability.**

Excerpt 15

'As we do not wear slippers in the kitchen, then he also started to keep his slippers out. There is no need to say… he knows that if father takes out slippers, I also have to keep them outside'

The excerpt shows the **good intellectual ability** wherein he could observe and follow the rules of the house.

Excerpt 16

'He also asks for help, as he does not know how to jump, then he will ask for help'

Excerpt 17

'If he needs something, he will signal ... If he wants a toy then we will find out and will make a gesture that he wants it.'

The excerpts 16 and 17 reflect the **communication** abilities of the participants i.e they **communicate their needs** properly.

Excerpt 18

'As he has got a star in school, he will come and tell me that Mumma, I have got a star today. I did a good job… I have been given a star today… or a smiley …'

The above excerpt reflects the ability of **communication** of the participant that **he can speak fullsentence** and **can relate to things from school**. This also shows his **emotional abilities** like he **values social rewards** and **shares joy with his mother**.

Excerpt 19

'If he gets hurt, he will cry once ... then if you hug him, he will be fine after a little bit of crying'

The above excerpts showed that participant **can be easily pacified** when upset that reflects his **control over emotions**.

Excerpt 20

'If I am wearing a soft dress, then she will come to me and touch, then will say this is so soft'

The above excerpt shows that the participant 6 is able to **identify the texture** of the cloth.

Excerpt 21

*'She is very fond of school since childhood, when she was two and a half years old, we had put her in the school, so she would get **very excited** to take her school bag'*

The excerpt 21 shows that participant 6 is **happy** to go school.

Excerpt 22

'It is like that if any of us is not at home… like father is at home.. Mother is not at home.. So as soon as doorbell rings, she would think mother would be there… she will say Dada.. Mummy… door open, then she will get very excited that mummy has come.'

The excerpt 22 shows how actively the participant anticipates and **responds to stimuli**.

Excerpt 23

'He likes to watch running water. We used to hide the water pipe but even then he would find that. One day, he noticed that I turned off the water from main supply….. So what he does, he goes there by himself and opens it and the water comes.'

The excerpt shows the **spatial memory** of the participant and also highlights his ability of **problem solving**.

Excerpt 24

'Like someone asked if there is milk, he saw here and there and said.. "There are 12 dairies (milk shops) here" and I did not know about these dairies. It was quite surprising that for the first time he started such communication by himself... Yes, there is no milk and after that he also said… take from Noor dairy… here in the left.'

The above excerpt shows **spatial memory** of the participant 1. It also indicates that he has **good observation** and the ability to give directions and communicate. He also **recognises what is important for a particular situation**.

Excerpt 25

'Her drawing is very good even without use of eraser. She does a very good drawing… from the very beginning since she had started to hold the pen. She makes a point. She will make it so beautiful even without looking at that thing. She will not leave in between without completing it what she has started and will not use eraser. She mostly makes cartoons. Once she has seen it, without seeing it again… she draws exact copy of a particular cartoon'

The excerpts show the **eidetic memory** of the participant 8 and also reflects that she has **Good drawing even without using eraser**.

Excerpt 26

'There have been many times that if I play a video after three to four months even then she will remember dance steps. Like a few days back, when I played a song (the video of which I showed her

about three to four months ago), she started dancing, then I did not even realize that she is doing the same steps but when I later saw that video, I remembered that she was doing exactly same steps as in the video.'

The excerpt shows the ability of participant 6 to **process from multiple sensory modalities simultaneously**. This also reflects her **eidectic memory**. She **is interested in music and dance** in such a way that she remembered exact dance steps seen long back and **good memory**.

Excerpt 27

'Let's say… she needs something to eat… she will come to me and ask … then I will ask for the bowl… then she will go to the kitchen or the place where she had kept the bowl last time and will bring that to me by her own'

This excerpt shows how the participant 6 **is able to find solution** for a particular situation.

Excerpt 28

'Yesterday she asked me to go to Gurudwara. So, we went there... she herself bowed her head... she was doing just like I was doing… there were so many people sitting… she sat there with them'

This excerpt shows how the participant 6 **follows norms of the religious place**.

Excerpt 29

'What is done in his group, he tries to do it. But his synchronization is not good. Once in school, he was made to participate in dance... So the girl who was with him, She kept looking after him as he was not doing properly'

This excerpt indicates that the participant 9 **participated in dance competition despite not being able to dance properly**.

Excerpt 30

'He shares things with him... like water, chocolate.'

The excerpt reflects **sharing** behaviour of the participant.

Excerpt 31

'As soon as she sees the children, she would approach them and will say hello to them… she will try to talk to them by her own…. does not understand anything... but would hug them, would touch them and would try to interact with them'

'He greets elders by touching their feet'

The excerpt 31 shows **socialization** of the participant 6 and his ability to follow appropriate social norms.

Excerpt 32

'He can remember the account number, can remember CVV, he remembers the 16 digit number of bank account… ATM number, the credit card number… he remembers their respective passwords too'

The above excerpt shows that **participant 1 can remember 12-digit card numbers and their respective passwords**. It also indicates that he has **numerical savant abilities**.

Excerpt 33

'He remembers the routes. As it is known to him where his house is situated… he also remembers the house in Barwala, where we used to live earlier'

The excerpts 49 show **good memory for the routes** i.e **savant ability** of the participant.

Excerpt 34

'If something relates to rhyme then she will start singing the rhymes or if she got a teddy bear, she would sing rhymes for teddy bear. Teddy bear, teddy bear, you are my friend'

The above excerpt shows the ability of the participant 6 to **sing rhymes appropriate to stimuli**.

Excerpt 35

'His friend's mother did not know how to book a cab, so he downloaded Uber app in her mobile and also taught her how to use it… so he was very happy that the aunt does not know and I know. Next day he also downloaded Paytm app in her mobile and told her... aunt you don't have paytm'

The above excerpt reflects that participant 1 can **book a cab at the age of 6 years, all by himself without anyone teaching him,** which is his **savant ability.** He also has **assertive behaviour** as he himself downloaded the applications and also taught his aunt how to use these appplications which are quite useful these days. He himself identified that she doesnot have these apps and for Uber app, she would require Paytm for payment i.e. he applied **contextual knowledge** and **planned** ahead.

Excerpt 36

'He is 6 years old and very good in studies… Yesterday, he filled the bank form by himself and when I told him that 'this is dirty and is not filled properly as he did not write first letter as capital letter and asked to write properly that first letter should be capital and others should be small then he picked up that behaviour and took another form and filled that properly'.

The above excerpt shows various cognitive abilities of participant 1. i.e. he **can fill out a bank form** at the age of 6 years with minimal support, he **wants to improve his mistakes, knows what is** right and **how to correct and follows directions given by his mother**.

Original Article

To Study the Clinical Profile of Adolescents with History of self-harm in Tertiary Care Institute

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ABSTRACT

Background: *Suicide, a major global public health issue, claims ~800,000 lives yearly, with attempts 20 times more frequent. It is the second leading cause of death for ages 15–29 globally, with India's rates rising from 1990–2016. Adolescent suicide (global rate: 14.5/100,000) is alarming, with attempts 50–200 times more common than completions. In the U.S., it ranks third for ages 15–19. Adolescents face heightened suicide risk due to bio-psychosocial changes, with attempters experiencing four times more stressful events than controls. Risk factors include female gender, depression, prior attempts, hopelessness, family/peer suicides, chronic illness, family dysfunction, and academic struggles. In India, student suicides are driven by intense academic and social pressures. Psychological autopsies highlight the need for urgent interventions.* ***Aims & Objectives:*** *To study the clinical profile of adolescents with self-harm.* ***Methods:*** *72 subjects were recruited in the study. Detailed assessment of psychiatric morbidity and attempted self-harm was done by clinical interview and validated by Beck Suicide Intent Scale & Presumptive Stressful Life Events Scale (PSLES).* ***Results:*** *Majority of patients belong to the age group of 15-19 years of age; 49 (68.05%) were female. Socioeconomic status wise majority belonged to middle class. Most common stressor identified was family related factors (59.72%) followed by college related factors (30.5%). Psychiatric Morbidity wise majority of adolescent self-harm patients exhibited no psychiatric morbidity (66.7%) followed by Major Depressive Disorder (19.4%).* ***Conclusion:*** *Our findings reveal that major depressive disorder predominantly affects adolescents engaging in self-harm, with family-related stressors and poisoning emerging as the leading precipitant and method, respectively. These insights emphasize the urgent need for tailored mental health strategies focusing on familial support and urban-specific challenges to prevent self-harm in adolescents.*

Key Words: *Adolescent self-harm, clinical profile, suicide attempt, stressors.*

Introduction

Globally, suicide is one of the leading causes of death and considered a public health and social issue. According to the World Health Organization, almost 800,000 people die from suicide every year; this roughly corresponds to one death every 40 seconds. These figures do not include suicide attempts, which can be more than 20 times frequent than completed acts. Worldwide, suicide is the second leading cause of death among those aged 15–29 years. India's contribution to global suicide rates has increased over the years 1990–2016.[1]

The number of adolescent suicides over the past several decades has tripled or quadrupled. Suicidal behaviors amongst adolescents is a matter of great concern and according to the American Academy of Paediatrics, committee on adolescence, suicide is the third leading cause of death for adolescents 15 to 19 years old.[5] Global Adolescent Suicide Rate is 14.5 per 100,000. For every adolescent suicide, there are

between 50 and 200 suicide attempts. In both early and late adolescents, suicide attempters are more than completers and this has huge consequences. Adolescence is a period characterized by rapid physical, biological and hormonal changes resulting into psychosocial, behavioral and sexual maturation. These bio-psychosocial factors play an important role in determining the adolescent behavior towards suicide.[2]

Compared with the general population, people with attempted suicide, experience four times as many stressful life problems in the six months before the act, with more of these events considered to be undesirable than in the control groups. Recent life event are significant in adolescent attempters as in adults.[3]

Potential risk factors for suicide attempts in adolescents include female gender, psycho pathology especially a major depressive disorder, previous suicide attempts, hopelessness, recent stressful life events, suicide attempts by family members or friends, chronic physical illness, family violence and dysfunction and lower academic achievement.[4]

Adolescence is the transitional phase of growth and development between childhood and adulthood. Adolescent suicides in India have become an alarming problem, especially among students. Severe competition and fierce expectation from the parents, teachers, family and friends have created an enormous stress on them. Psychological autopsy studies have been used to construct an overall view of suicide by collecting all available relevant information on the victim's life preceding his or her death.[5]

Aims and Objectives

To study the clinical profile of adolescents with self-harm.

Inclusion Criteria

Adolescents who attempted self-harm attending hospital casualty/OPD/IPD services and undergo detailed examination.

Attempters who/whose attendants were willing to give informed written consent.

Exclusion Criteria

Attempters who/whose attendants were not willing to give written consents.

Attempters who were critically ill to cooperate for assessment.

Materials and Methods

After taking permission from the Scientific and Ethical committee of National Institute of Medical Sciences and Research, Jaipur and on the basis of inclusion and exclusion criteria, 72 adolescents (10-19 year) who attempted self-harm attending hospital Casualty/OPD/IPD were included in the study. A written consent from the attempters and their attendants were obtained after explaining the study to the patient. The socio-demographic data was obtained on a specially designed semi structured performa consisting of socio-demographic & clinical profile. Thereafter beck's suicide intent scale[6] and presumptive stressful life events scale (PSLES)[7] were administered.

Results

Table-1: Sociodemographic variables

Variables		No. of Patients N = 72
Age	10-14	20
	15-19	52
Sex	Male	23
	Female	49
Education	Primary	12
	Middle	28
	Highschool	32
Socioeconomic status	Lower-middle	13
	Middle	38
	Upper	21
Domicile	Rural	16
	Urban	56
Family	Nuclear	52
	Joint	20
Religion	Hindu	63
	Muslim	9
	Others	0
Methods of self-harm	Poisoning	43
	Hanging	15
	Drug overdose	7
	Others	7

Table-2: Common stressors

Variables		No. of Patients N = 72
Common stressors	College related factors	22
	Family related factors	43
	Love failure	7

Table-3: Clinical Profile/Psychiatric Morbidity

Variables		No. of Patients N = 72
Clinical Psychiatric Morbidity	Major Depressive Disorder (MDD)	14
	ADHD	3
	Panic Disorder	2
	Generalized Anxiety Disorder (GAD)	2
	Borderline Personality Disorder	3
	No Psychiatric Morbidity	48

Discussion

In contrast to the demographic distributions reported in various studies, our research presents a unique focus. While Mathew et al[1] included 7 patients, Kumar et al (2016)[2] studied 50 patients, Ramalingam et al[3] also examined 50 patients, and Narayanan et al[5] involved 55 patients, our study differs from these studies by encompassing a larger sample size of 72 adolescent patients specifically diagnosed with self-harm behaviours.

In our study, the majority of adolescent patients (68.05%) were female, a finding that aligns with the observations of Mathew et al,[1] who reported 57.14% female participants, Kumar et al[2] at 54%, and Ramalingam et al[3] at 70%. In contrast, Kumar et al[4] observed an equal gender distribution, with both males and females comprising 50% of their sample. This shift towards a higher proportion of female adolescents in more recent studies may reflect evolving sociocultural dynamics, such as increased awareness and reporting of self-harm behaviours among females, as well as potential changes in societal pressures and mental health challenges faced by adolescent girls.

In our study, a significant majority of adolescent patients (77.7%) hailed from urban backgrounds, a finding that aligns with the observations of Kumar et al[2] (80%) and Ramalingam et al[3] (88%), who also reported higher proportions of urban residents among their study populations. Conversely, Kumar et al[4] noted a predominance of rural backgrounds among their subjects, with 66.8% from rural areas. This discrepancy underscores the evolving demographic landscape of self-harm behaviours, potentially influenced by factors such as urbanization, increased stressors in urban environments, and greater access to healthcare and mental health services in urban settings.

In our study, the majority of adolescent patients (72.22%) hailed from nuclear families, a finding that aligns with the observations of Kumar et al,[2] who reported 66% of their subjects from nuclear families, and Ramalingam et al,[3] who noted 72% from similar family structures. This contrasts with the earlier study by Kumar et al,[4] where 56.8% of adolescent self-harm patients were from nuclear families. This shift towards nuclear family backgrounds in recent studies may reflect broader societal changes, such as urbanization and evolving family dynamics, which could influence the prevalence and nature of self-harm behaviours among adolescents.

In our study, the majority of patients hailed from a middle socioeconomic class (52.77%) aligning with findings from Kumar et al,[2] where 82% of patients belonged to the same class and also Narayanan et al[5] in which most of the patients were from middle class (61.8%) in which upper middle class was 34.5% and lower middle class was 27.3%. However, Ramalingam et al[3] reported a stark contrast, with only 6% of patients classified as middle class, while 88% were categorized as lower-middle class. Additionally, Kumar et al[4] observed that most patients were from the middle class, but the proportion was notably lower at 41.87%. These variations highlight significant differences in the socioeconomic distribution of patients across the studies, with our findings and Kumar et al. (2016)[2] showing a stronger representation of the middle class compared to the predominant lower-middle class in Ramalingam et al[3] and the more balanced distribution in Kumar et al.[4]

In our study, poisoning was the most common method of self-harm, accounting for 59.72% of cases, while drug overdose was the least common at 9.72%. These findings align with Kumar et al,[2] where poisoning was the most prevalent method at 46%, but differ as hanging was the least common at 12%. Similarly, Ramalingam et al[3] reported poisoning as the most frequent method at 94%, with hanging being less common at 6%. Likewise, Kumar et al[4] found poisoning to be the predominant method at 83.7%, with hanging as the least common at 4.1%. In contrast, Mathew et al[1] and Narayanan et al[5] did

not investigate specific methods of self-harm.

In our study, family-related factors were the most common stressor, accounting for 59.72% of cases, while love failure was the least common at 9.72%. These findings are consistent with Mathew et al[1], where all seven adolescent patients identified family-related factors as their primary stressor. Similarly, Kumar et al[2] reported family-related factors as the most prevalent stressor at 40%, with love failure at 12%. However, our results differ from Kumar et al,[4] where interpersonal problems, akin to love failure, were the most common stressor at 63.5%. Narayanan et al[5] noted a history of death of a family member, friend, or relative within the past year as a significant stressor, while Ramalingam et al[3]did not explore stressors in their study.

Our study revealed that 66.7% of adolescent self-harm patients exhibited no psychiatric morbidity, closely aligning with Ramalingam et al[3], which reported 62% without psychiatric disorders, and showing similarity to Kumar et al,[4] where 35.1% had no psychiatric diagnoses. In contrast, our findings diverge from Kumar et al,[2] where adjustment disorder predominated at 40%, a diagnosis absent in our cohort. Regarding Major Depressive Disorder (MDD), our prevalence of 19.4% is comparable to Kumar et al[2] at 22%, but differs markedly from Narayanan et al[5], which reported depression in 50.9% of cases, highlighting potential variations in diagnostic criteria or sample characteristics that merit further exploration. Mathew et al[1] did not examine the clinical profile or psychiatric morbidity among patients.

Conclusion

Our findings reveal that major depressive disorder predominantly affects adolescents engaging in self-harm, with family-related stressors and poisoning emerging as the leading precipitant and method, respectively. These insights emphasize the urgent need for tailored mental health strategies focusing on familial support and urban-specific challenges to prevent self-harm in adolescents.

Limitations

A larger sample is needed for this study with a prospective assessment to generalize the findings. The sample may be gathered from more than one centre.

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There was no financial support provided to conduct this study.

Conflict of Interest

There was no conflict of interest.

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Psychomicrobiology

Neurobrucellosis – A review

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Introduction

Brucellosis also known as "undulant fever," "Mediterranean fever," or "Malta fever," is a zoonotic infection caused by the Gram negative bacteria belonging to the genus *Brucella*. It is an intracellular, aerobic bacteria, consisting of six species, with majority four causing brucellosis in humans, namely, *Brucella abortus*, *B. melitensis*, *B. suis* and *B. canis*.[1,2] It commonly infects domestic animals (particularly cattle, sheep, goats and pigs), as well as wildlife and marine animals, hence, the transmission to humans from animals is usually foodborne, often due to the consumption of unpasteurised milk or associated dairy products. *Brucella* usually known to transmit via direct contact with blood, faeces, urine or tissues of infected animals can also be acquired in the laboratory due to inhalation of aerosolized particles or inadequate care when handling the infective organism.[3] Direct person-to-person spread of brucellosis is rare, as is the transmission via blood transfusion, tissue transplantation or sexual contact.[1] It involves multiple systems with clinical manifestations including fever, fatigue, weakness, diaphoresis, joint pain, reduced appetite, headache, muscle pain, low back pain, hepatosplenomegaly and arthritis and is one of the commonest zoonoses in the world, with more than 500,000 new cases annually.[4] Worldwide, *Brucella melitensis* is the most prevalent species causing human brucellosis, owing in part to difficulties in immunizing free-ranging goats and sheep.[5]

Neurological impact of Brucella

Neurobrucellosis is a rare complication of brucellosis, and it's incidence in brucellosis patients though variable between studies, is usually < 10%.[4] The most commonly involved is the osteoarticular system, followed by the nervous system. Additionally, hematologic, cardiopulmonary and genitourinary manifestations are also found.[1] *Brucella* enters the bloodstream through the reticuloendothelial system leading to bacteraemia before it starts invading the meninges with high affinity.[4] Most of the symptoms and neurological manifestations start appearing after this period of bacteraemia, in a more subacute manner and can be expressed from months to years after the onset of infection. The acute phase of the disease begins after an incubation period of 2-4 weeks, usually presenting as intermittent fever, generalised bodyache and diaphoresis.[1] Once the host immunity starts declining, it leads to the proliferation of the bacteria, which then start invading other structures of the nervous system through the damaged blood–brain barrier.[4] The underlying mechanisms of neurobrucellosis involve direct invasion by *Brucella abortus* into the Central Nervous System (CNS), facilitated primarily via two routes: the "Trojan horse" mechanism and transcellular traversal of the blood–brain barrier (BBB). *B. abortus* utilizes infected monocytes to cross the BBB by employing these cells as a means to enter the CNS. Once inside, the bacteria can infect brain microvascular endothelial cells, as well as the astrocytes and microglia thus triggering an inflammatory response, characterized by the production of cytokines and chemokines, which leads to astrogliosis and potentially to the apoptosis of astrocytes. The hypothesis is that the bacterial antigens may mimic neuronal antigens (molecular mimicry), leading to an autoimmune response that targets the myelin sheath of nerve cells which could explain the demyelinating-like lesions observed in some patients with neurobrucellosis. The damage to both the peripheral and central nervous system is predominantly attributed to indirect immune mechanisms[6] resulting in various clinical symptoms,

such as headache, weakness of the limbs, hearing loss, meningoencephalitis, myelopathies, mental abnormalities and vascular disturbances.[4] Frequent complications involving the central nervous system include acute meningitis, myelitis, stroke, subarachnoid haemorrhage, seizures and cranial nerve involvement, especially the vestibulocochlear nerve. Complications involving the peripheral nervous system include Guillain Barre syndrome, sciatica, polyradiculopathy and psychiatric sequelae (Table 1).[6-9] Since the clinical symptoms of neurobrucellosis are not very specific, the risk of clinically misdiagnosing it is really high as it is very easy to confuse neurobrucellosis with diseases like tuberculous meningitis and multiple sclerosis thus posing a great challenge for the clinicians.[1,4]

Table-1: Neuropsychiatric Sequelae in Neurobrucellosis

Neurological Sequelae	Meningoencephalitis
	Meningitis
	Myelopathies
	Weakness in limbs
	Guilain Barre syndrome
	Polyradiculopathy
	Stroke
	Subarachnoid Hemorrhage
	Cranial nerve involvement
	Seizures
	Delirium
	Deafness
	Headache
	Joint Pain
	Malaise
	Myalgia
	Brain abscess
	Vascular changes
Psychiatric Sequelae	Depression
	Anxiety Disorder
	Psychosis
	Personality changes
	Euphoria
	Insomnia

Cerebrospinal fluid (CSF) is ideal sample for future research, with a primary focus on the detection of neurobrucellosis. Traditional approaches to detect neurobrucellosis, such as microbial culture and serological tests, do have limitations in application due to low sensitivity or specificity, along with the requirement for a long turnaround time. Though serological tests like RBPT (Rose Bengal plate tests), STAT (Standard tube agglutination test), and ELISA (Enzyme-linked immunosorbent assay) identify antibodies in serum and CSF, combination of diagnostic and clinical methods is recommended for accurate diagnosis of brucellosis.The STA test is considered the cornerstone of brucellosis diagnosis and usually becomes positive during the second to the third week of illness and although STA remains the most popular and used test for routine diagnostic practice, ELISA has a higher sensitivity and specificity and is the best choice for diagnosing neurobrucellosis and complicated cases. Regarding serological tests, it is recommended that a combination of two different tests should be performed (for example, STA and Coombs or STA and ELISA) to increase the diagnostic accuracy.[1] Molecular techniques have been used in cases where diagnosis of NB has been difficult, as well as in cases of seronegative organ-specific brucellosis. CSF PCR for brucella is preferred for diagnosis and follow-up of NB and it has been proposed that PCR assays are more sensitive than serological testing for detecting relapses of brucellosis. It is more rapid and sensitive than conventional microbiological tests and molecular methods allow for the diagnosis of brucellosis in a few hours with high sensitivity and specificity. They remain positive for a long time in patients who are apparently asymptomatic and when clinical relevance is unclear. Conventional and real-time (RT) PCR assays directly detect Brucella - specific genes, including: BCS P31, BP26, 16 S rRNA, and the insertion sequence rRNA. However, the sensitivities of these assays are quite variable, ranging from 50 to 100% and the interpretation of molecular PCR-based results also requires careful attention because it may not necessarily indicate an active infection, but rather a low bacterial inoculum, the presence of DNA from dead bacteria or from a patient who has recovered by the time the PCR is processed.[7]

Recent researches have recommended Next-generation sequencing (NGS) as a method for identifying pathogenic microorganisms based on sequencing, and its utilization is growing in the diagnosis of infectious diseases affecting the CNS. NGS is also recommended to be used in diagnosing neurobrucellosis due to its enhanced specificity and rapid diagnosis.There are also researches proposing that metabolites of (CSF) are biomarkers for neurobrucellosis, representing a potential diagnostic modality for neurobrucellosis. CSF samples from

neurobrucellosis patients and normal controls were analyzed using liquid chromatography-mass spectrometry (LC–MS) to detect metabolites and the results did show differences in metabolite profiles between neurobrucellosis patients and normal controls as well as the elevated inflammatory cytokines in CSF further support the utility of metabolomics for diagnosis and treatment insights.Although the effectiveness of NGS and the identification of metabolites of cerebrospinal fluid using LC–MS for detecting neurobrucellosis has been proven but large-scale studies with expanded sample sizes are crucial for further validation. Further research regarding the diagnosis of neurobrucellosis is expected to lead to earlier and more precise identification of the condition, which would enable timely and appropriate therapeutic interventions but it is also crucial to validate the efficacy of these diagnostic methods and establish standardized protocols for their use in clinical settings (Table 2).

Hence, the diagnosis relies on a combination of suggestive symptoms, positive cerebrospinal fluid (CSF) culture or Brucella IgG agglutination in blood, lymphocytic pleocytosis and increased CSF protein but despite the amalgamation of various factors the diagnosis of neurobrucellosis is still not simple due to its variable manifestations and delayed clinical recognition.[6]

Table-2: Sensitivity of various laboratory test

	Serum sensitivity	CSF sensitivity
Standard tube agglutination	94%	78%
Rose Bengal Test	96%	71%
ELISA IgM	70%	80%
ELISA IgG	91%	80%

Conclusion

Brucellosis has always been a common and major health problem of developing countries with Neurobrucellosis being one of its serious complications. Although the incidence rate is usually < 10%, its early diagnosis and treatment are very important. Since the presentation of Neurobrucellosis is rare in the clinical context, there is no effective diagnostic "gold standard", and the clinical manifestations, CSF parameters, and radioimaging changes lack specificity, making its diagnosis very difficult. Therefore, when a patient presents with nervous system dysfunction accompanied by fever and fatigue, or has a contact history with animals and animal products, the possibility of Neurobrucellosis should be considered, and empirical treatment should be provided if necessary. Yes, it is challenging to develop a highly specific and sensitive diagnostic regimen for the diagnosis of Neurobrucellosis but the development of such a test should be the focus of research for the diagnosis and treatment of Neurobrucellosis.[4]

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Psychophysiotherapy

Chronic Fatigue Syndrome – A Psychophysiotheraputic Approach

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Chronic fatigue syndrome (CFS) is an illness characterized by persistent, medically unexplained fatigue. Symptoms include severe, disabling fatigue, as well as musculoskeletal pain, sleep disturbance, headaches, and impaired concentration and short-term memory. Individuals experience significant disability and distress, which may be exacerbated by lack of understanding from others, including healthcare professionals. It is a complex multisystem condition that is associated with a substantial impairment of pre-illness levels of activity along with impaired quality of life. Patients with CFS report increased symptoms during and after various physiological challenges, such as physical exercise, orthostatic stress, and cognitive tasks.[1] CFS produces marked reduction in activity levels and an increase in mental fatigue. It is accompanied by four or more co-existing symptoms with cognitive or neuropsychiatric nature.[2] In chronic fatigue syndrome (CFS), patients experience extreme fatigue that is medically unexplained. Many patients feel limited in their daily activities, and are not able to work at all or as much as they did before their CFS started.[3]

For an illness to be a cause for CFS, it must be of at least 6 months duration and of sufficient severity to cause substantial functional impairment. The symptoms associated with the illness must be very debilitating and persistent with little spontaneous recovery.[4,5] In CFS, Fatigue is accompanied by other complaints such as joint pain, poor concentration, and post exertion malaise, cognitive impairments, muscle and joint pain, sleep disturbances, and immune system dysfunction, resulting in restrictions on participation in daily activities.[6] Other symptoms include problems with memory and attention, commonly referred to as "brain fog," slowed information processing, difficulty articulating ideas or finding the correct words, inability to multitask or sustain concentration on activities, short-term memory impairment, and a shorter attention span.[7]

Several predisposing factors play an important role in the aetiology of CFS. Lifestyle and personality characteristics like neuroticism and introversion are predisposing factors for developing CFS.[8] Acute physical or psychological stress, Cognitions, and behavioural factors such as persistent avoidance of activities are associated with an increase of symptoms of CFS. Other perpetuating factors are a strong belief in a physical cause of the, lack of social support and poor sense of control over the complaints contribute to the perpetuation of CFS.[9] The decrease in personal, occupational and social activities that accompanies the illness instills a sense of frustration and hopelessness within the patient. In addition, financial concerns have been raised regarding the increased uptake of unemployment benefits and the drain on healthcare resources brought about by the illness.[2]

Pathophysiology include a marked decline in grey matter volume which is found to be associated with decline in physical activity as compared to normals.[10] The information processing speed and efficiency in CFS patients has been found to be reduced when compared with healthy non-related controls but similar when compared with their healthy twins;[11] Existing literature suggests a

hyperserotonergic state among CFS patients in contrast to hyposerotonergic state seen in major depression. Cleare et al.[12] showed decreased 5-HT1A receptor binding throughout the brain using positron emission tomography (PET), the reduction being most marked in the hippocampi bilaterally. The authors noted that it is possible that 5-HT1A receptor down regulation is a response to increased levels of synaptic serotonin, but also noted alternative explanations.[13] Some of the most robust findings concerning the pathophysiology of CFS have been related to the HPA axis, with much evidence supporting mild HPA axis hypoactivity.[14] CFS has also been found to be associated with changes in the immune system, especially with immune activation and perturbation in T and natural killer cell count and functions. Cytokines, major cell products reflecting immune cell function, were also suggested to play a role in the pathogenesis and clinical manifestation of CFS. Many studies measured various cytokines, mainly concentrating on pro-inflammatory ones such as TNF-α, IL-1 and IL-6 as these are known to be involved in the regulation of the HPA and sympathetic nervous system,[15] but the results were contradictory[16] Regarding genetics of the disease pathogenesis, studies have reported the involvement of the serotonin transporter gene and the angiotensin-converting enzyme gene, the latter being associated with muscle metabolism and physical endurance[17] Recent studies confirmed the importance of several psychological factors especially in maintaining CFS: lack of sense of control over symptoms,[17] symptom focusing[18] and a physical attribution for fatigue.

Treatment

As both the cause and the pathophysiology that maintains CFS are not very well established, treatments have been investigated on a pragmatic basis. Previous research has suggested cognitive, behavioral, emotional, physiological and social factors work together to perpetuate the symptoms of CFS.[19] Systematic reviews of possible management protocols for CFS cite approaches such as Cognitive Behavior Therapy (CBT) and Physiotherapy including Relaxation therapy[20] and Graded Exercise Therapy as the most consistently effective forms of intervention for CFS.[21]

Physical activity can improve health and quality of life for people with chronic disease (Blair 2009).[22] Several hypotheses have been proposed to signify exercise therapy might be a treatment for CFS. The 'deconditioning model' assumes that physical activity should reduce reversible physiological changes of deconditioning and facilitate recovery.[23] However, mediation studies suggest that improved conditioning is not necessarily associated with better outcomes.[24] Some graded exercise therapy programs are designed to gradually reintroduce the patient to the avoided stimulus of physical activity or exercise, which may involve a conditioned response leading to fatigue.[23] Mediation studies suggest that reduced symptom focus may mediate outcomes with graded exercise therapy, consistent with this model.[23]

Taking into consideration the most common symptoms that chronic fatigue syndrome causes, it is strongly believed that an accurate and conscious intervention performed by the physiotherapist can be significantly helpful in patients with CFS & physical activity can reduce fatigue and improve energy. Also, it has been demonstrated that simply educating patients about the benefits of exercise can improve activity levels and functional status among CFS patients.[25]

Physiotherapy treatment for CFS aims to improve the limitations caused by disease in performing Activities of Daily Living and to sustain the improvement to the maximum possible period. Physiotherapy techniques such as Graded Exercise Therapy (GET), Manual Relaxation Therapy (MRT), mobilization, and body awareness are the most effective in reducing medium and long-term fatigue severity in CFS patients. But continuous exercises like aerobic exercises were found to induce sustained exacerbation of fatigue in patients with CFS.[26] Also, Sandrler et al. compared interval and continuous exercise programs and concluded degree of exacerbation of fatigue after the two-exercise type suggests that interval exercise should be explored as an alternative to continuous aerobic approaches, which are part of GET.[27]

Physiotherapy plays a crucial role in managing CFS by addressing the physical limitations, promoting energy conservation, focusing on improving functions and reducing pain through various modalities like exercise therapy, manual therapy, and education. It helps individuals with CFS improve strength, endurance, and flexibility, making it easier

to perform daily activities. Teaching patients energy management techniques, including pacing and prioritization, and utilizing assistive devices to reduce the impact of fatigue is also of prime importance.

Key aspects of physiotherapy management in CFS include Energy Management by educating patients on pacing, prioritization, and the use of assistive devices to conserve energy and reduce fatigue, teaching gentle, graded exercises to improve strength, endurance and functional status and avoiding exertion. Manual therapy Techniques along with heat/cold applications may help in alleviating joint and muscle pain. Providing education and counseling on the nature of CFS, coping strategies, and lifestyle modifications and addressing physical limitations such as difficulty lifting, reaching, or sustaining repetitive activities and Promoting Self-Management like encouraging patients to actively participate in their own care and develop self-management strategies remain most important physiotherapy aspects to treat patients with CFS. Stress can trigger symptoms and flare-ups in CFS, relaxation techniques like deep and diaphragmatic breathing exercises can help patients to manage stress related problems, incorporating cognitive therapy techniques to help patients develop coping strategies to manage their symptoms. Techniques like MRT and GET can help improve body awareness and reduce fatigue.

Cognitive behavioral therapy[28] is commonly used to treat chronic fatigue syndrome and has been shown to be effective for reducing fatigue and improving physical functioning. The Cognitive Behavioral Therapy (CBT) treatment is one of the most studied in the literature, and has shown good results in improving patients' autonomy in daily life activities and their control of symptom. Bourkeet al.[28] recently suggested pain symptoms in CFS patients gets better by Cognitive Behavioral Therapy (CBT), and Graded Exercise Therapy (GET). Significant changes in functional status and general fitness are indicated when applying this approach to CFS patients. The positive effects of cognitive behavioural therapy was found to be maintained for long term, regardless of the setting in which the treatment took place.

Conclusion

Treatment for CFS aims to improve and sustain the improvement of any limitations of normal daily life activities. To reach this goal, both physiotherapy and psychotherapy (CBT) should be introduced in combination. Physiotherapy programs that promote physiotherapy techniques such as graded exercise program are the most effective in reducing medium and long-term fatigue severity in CFS patients. However, the best achievements come from the combinations of psychological treatment (CBT) and physiotherapy treatments.

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Newer Development

Autism Spectrum Disorder and the Effects of Heavy Metals: A Review of the Evidence

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1. Introduction

Autism Spectrum Disorder (ASD) encompasses a range of neurodevelopmental conditions that typically emerge in early childhood. The global prevalence of ASD has increased substantially over recent decades, now estimated at 1 in 100 children worldwide.[1] Although genetic predisposition plays a significant role in ASD, environmental factors are also implicated in its pathogenesis.[2] Among these, exposure to heavy metals has gained attention due to their neurotoxic potential.

2. Overview of Heavy Metals and Neurotoxicity

Heavy metals such as mercury (Hg), lead (Pb), cadmium (Cd), and arsenic (As) are persistent environmental pollutants. These metals can interfere with central nervous system development by inducing oxidative stress, disrupting neurotransmitter systems, and altering gene expression.[3] Children are particularly vulnerable due to their developing nervous systems and behaviors that increase exposure risk.

3. Mercury and ASD

Mercury, particularly in its organic form (methylmercury), is a known neurotoxin. Prenatal and early postnatal exposure has been linked to cognitive and behavioral impairments.[4] Some studies suggest elevated mercury levels in the blood, hair, or urine of children with ASD.[5] However, findings remain inconsistent. A meta-analysis reported higher mercury levels in ASD patients compared to controls, but noted significant heterogeneity among studies.[6]

4. Lead and ASD

Lead exposure is associated with impaired neurodevelopment, reduced IQ, and behavioral disorders.[7] Several studies have identified elevated blood lead levels in children with ASD.[8] One possible mechanism involves lead-induced oxidative stress and inflammation, which may exacerbate neurodevelopmental disorders.[9] Nevertheless, causality has not been definitively established.

5. Cadmium and Arsenic

Although less extensively studied than mercury and lead, cadmium and arsenic are emerging as potential contributors to ASD. Elevated levels of cadmium have been found in children with ASD, potentially due to impaired detoxification mechanisms or increased environmental exposure.[10] Arsenic, commonly present in contaminated water and food, has also been linked to developmental delays and cognitive impairments, though specific studies on ASD are limited.[11]

6. Mechanisms of Action

The neurotoxic effects of heavy metals relevant to ASD may involve several pathways:

- **Oxidative stress:** Heavy metals promote reactive oxygen species (ROS) production, leading to cellular damage.
- **Mitochondrial dysfunction:** Mitochondria are particularly vulnerable to heavy metal-induced damage, impairing neuronal energy metabolism.[12]
- **Immune dysregulation:** Dysregulated immune responses and chronic inflammation have been reported in ASD and may be triggered or worsened by toxic exposures.[13]
- **Epigenetic modifications:** Metals can influence gene expression without altering DNA sequences, potentially affecting neurodevelopment.[14]

7. Limitations and Confounding Factors

Establishing a direct causal relationship between heavy metal exposure and ASD is challenging due to several confounders:

- **Reverse causation:** Children with ASD may have dietary or behavioral patterns that increase exposure or impair excretion of metals.
- **Genetic susceptibility:** Polymorphisms affecting detoxification pathways (e.g., glutathione metabolism) may moderate individual vulnerability.
- **Measurement variability:** Studies vary widely in biological samples analyzed (hair, urine, blood), timing of sample collection, and analytical methods.

8. Therapeutic and Preventive Perspectives

Chelation therapy has been explored in ASD to reduce heavy metal burden, but evidence supporting its safety and efficacy is lacking, and it may pose serious risks.[15] A more prudent approach emphasizes minimizing environmental exposures through public health measures, safer consumer products, and screening for at-risk populations.

9. Conclusion

There is growing evidence that heavy metals may contribute to the development or exacerbation of ASD through various neurotoxic mechanisms. While associations have been observed, causality remains unproven due to methodological limitations. Future research should prioritize longitudinal cohort studies, standardized biomarker assessments, and exploration of gene-environment interactions.

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Drug Review

Lumateperone — A Promising Atypical Antipsychotic for Schizophrenia & Bipolar Depression

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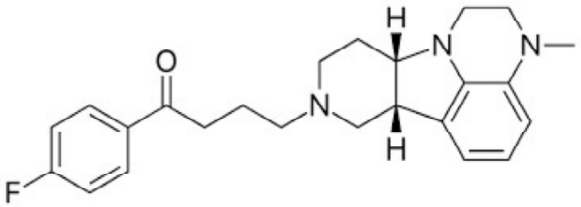
Introduction

Mental illness treatment is a rapidly evolving field. The arrival of new psychotropic drugs consistently offers renewed hope for those affected, as mental illness is a significant burden, diminishing quality of life, increasing comorbidity, and decreasing life expectancy.[1] Lumateperone is a novel atypical antipsychotic developed by Intra-Cellular Therapies.[2] Approved by the U.S. FDA in 2019 for schizophrenia[3,4] and in 2021 for bipolar depression,[5] lumateperone offers a distinct pharmacological profile aimed at improving efficacy while minimizing the side effects commonly associated with traditional antipsychotics.



Chemical structure of Lumateperone

Mechanism of Action

Lumateperone functions via a multimodal mechanism, targeting several neurotransmitter systems:

- ***Dopamine D2 receptor modulation***: Indirectly modulates D2 receptors via presynaptic partial agonism and postsynaptic antagonism, contributing to efficacy with fewer extrapyramidal symptoms.[6,7]
- ***Serotonin 5-HT2A antagonism:*** Alleviates positive and negative symptoms of schizophrenia and contributes to antidepressant effects.[7,8]
- ***Glutamatergic modulation:*** Enhances NMDA receptor function through D1 receptor-dependent pathways, suggesting potential cognitive benefits.[8]
- ***Serotonin transporter inhibition:*** Increases serotonergic transmission and provides antidepressant activity.[8]

Clinical Efficacy

1. Schizophrenia

Multiple double-blind, placebo-controlled trials have shown significant improvements in PANSS total scores in patients receiving lumateperone 42 mg daily. The drug was well tolerated and produced fewer side effects compared to traditional antipsychotics.[8-19]

2. Bipolar Depression

Lumateperone was shown to be effective as monotherapy for bipolar I and II depression, with improvements in MADRS scores and functional outcomes. It did not trigger mania or hypomania, a common concern in bipolar treatment.[18,19]

Ongoing and Completed Clinical Trials of Lumateperone

Lumateperone has undergone extensive clinical evaluation to determine its efficacy and safety in various psychiatric conditions. Below is a summary of key completed and ongoing clinical trials across different indications:

1. Schizophrenia

- *Phase 3 Trial (NCT02282761):* In a double-blind, placebo-controlled trial with 450 patients experiencing acute exacerbation of schizophrenia, lumateperone 42 mg significantly improved PANSS total scores compared to placebo (LS mean difference: -4.2; p = 0.02).[14]
- *Phase 3 Trial (NCT02469155):* Compared lumateperone (42 mg and 14 mg) with risperidone (4 mg) and placebo in 696 patients. Risperidone showed significant efficacy,while lumateperone did not separate from placebo, likely due to a high placebo response.[15]

2. Bipolar Depression

- *Monotherapy Trials:* Two Phase 3 trials showed lumateperone 42 mg significantly reduced MADRS scores in patients with bipolar I and II depression.[18]
- *Adjunctive Therapy Trial:* Lumateperone 42 mg with lithium or valproate resulted in greater reductions in depressive symptoms compared to placebo.[19]

3. Adjunctive Treatment in Major Depressive Disorder

- *Studies 501 and 502:* Ongoing global Phase 3 trials evaluating lumateperone 42 mg as adjunctive therapy to antidepressants in patients with MDD. Topline results are expected soon and may support future regulatory submissions.[18]

4. Pediatric and Long-Acting Injectable (LAI) Programs

- *Pediatric Studies:* Ongoing trials include those investigating lumateperone for irritability in autism spectrum disorder and in pediatric populations with bipolar depression and schizophrenia.[17]
- *LAI Formulation:* A Phase 1 single ascending dose study is planned to evaluate long-acting injectable formulations with monthly or longer dosing intervals.[16]

Safety and Tolerability

One of the most important attributes of lumateperone is its favorable safety profile:[10-13]

— *Minimal metabolic impact*: Negligible weight gain and no significant changes in metabolic markers.
— *Low extrapyramidal symptoms*: Few reports of movement disorders due to lower striatal D2 receptor occupancy.
— *Prolactin-sparing*: No significant prolactin elevation.
— *Sedation and QTc prolongation*: Mild sedation with minimal QTc effects.

These factors make lumateperone suitable for long-term use and improve adherence and quality of life.

Dosage and Administration

— *Indicated Dose:* 42 mg once daily, with or without food.
— No titration required.
— No dose adjustment needed for renal or mild-to-moderate hepatic impairment. Avoid coadministration with strong CYP3A4 inhibitors or inducers.

Place in Therapy

Lumateperone fills an important niche in psychiatric care:

— *For schizophrenia:* Safe and effective alternative for patients at risk of metabolic syndrome or intolerance to other antipsychotics.[3]
— *For bipolar depression:* One of the few antipsychotics approved as monotherapy, without the risk of mania induction. Its once-daily dosing and broad-spectrum efficacy make it a strong candidate for first-line or switch therapy.[4]

Conclusion

Lumateperone represents a breakthrough in antipsychotic treatment, combining broad efficacy with superior tolerability. It supports modern psychiatric goals of holistic care—balancing symptom control, cognitive support, and minimal side effect burden. As more long-term and real-world data become available, lumateperone is poised to become a cornerstone in managing schizophrenia and bipolar depression.

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Forensic Psychiatry

Sexsomnia: A Forensic Psychiatry Perspective

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Introduction

The International Classification of Sleep Disorders, Third Edition (ICSD-3), categorizes sleep disorders into seven primary groups namely, insomnia disorders, circadian rhythm sleep-wake disorders, central disorders of hypersomnolence, sleep-related breathing disorders, sleep-related movement disorders, parasomnias, and other sleep disorders. Parasomnias are defined as undesirable physical events, experiential phenomena, or autonomic nervous system activations occurring during sleep, or during transitions between sleep and wakefulness. They are mainly divided in those which occur in non-rapid eye movement (NREM) and rapid eye movement (REM) sleep.[1] Parasomnias are relatively common in children, with a prevalence exceeding 15%, whereas their occurrence in adults is less frequent (<6%) and may suggest underlying psychopathology.[2]

It is now well-established that sexual behaviors can occur during sleep. The most common are nocturnal penile erections, which consistently occur in healthy males during REM sleep as a result of involuntary penile vasodilation, independent of erotic dreaming. Similarly, REM-associated vaginal lubrication has been documented in females.[3]

Sexsomnia or *Sleep Sex Syndrome*, is characterized by sexual behavior during sleep, and lies within the spectrum of parasomnias occurring predominantly in NREM sleep.[1] The term was coined by Dr. Colin Shapiro in 2003.[4] It involves engagement in sexual acts while being asleep. A variant of sexsomnia involves sexual behaviors occurring during a state of confusional arousal, a transitional phase of waking from sleep without full restoration of conscious awareness. Manifestations may range from sleep-related masturbation and sexual vocalizations to fondling and even complete sexual intercourse with a bed partner. In nearly all of the reported cases, individuals typically exhibit complete or near-complete amnesia for the episode.[5]

Sexsomnia is characterized by several distinctive features, including the involvement of a bed partner who may occasionally be a willing participant. It involves the presence of complex autonomic, motor and behavioral components. Core features of this parasomnia include sexual arousal accompanied by autonomic activation like penile erection, ejaculation, vaginal lubrication, sweating and cardiorespiratory changes.

History

Sexsomnia was first documented in 1986 in a case from Singapore, involving a married man who engaged in nightly sleep-related masturbation. The behaviour made his wife feel inadequate, especially given their routine of engaging in sexual intercourse prior to sleep.[6] The term sexsomnia was formally introduced by Shapiro and colleagues in 2003, based on a case series of 11 individuals who exhibited sexual behaviors during sleep.[4] Subsequent literature has documented a broad spectrum of sleep-related sexual activities, including masturbation, genital fondling, sexual intercourse with orgasm, and, in some cases, non-consensual acts such as sexual assault or rape. These behaviors are collectively classified under the umbrella term sexsomnia.

Nosology

Sexsomnia is a distinct parasomnia recognized in both the Diagnostic and Statistical Manual of

Mental Disorders, Fifth Edition (DSM-5) and ICSD-3. The DSM-5 classifies sexsomnia under non-rapid eye movement [NREM] sleep arousal disorders.[7] Similarly, the ICSD-3 categorizes sleep-related abnormal sexual behaviors as a possible subtype of confusional arousal or sleepwalking, which themselves lie within the category of NREM-related parasomnias.[1]

Epidemiology

Limited data are available on the epidemiology of sexsomnia in the general population, likely due to low awareness of the condition as a medical disorder. Individuals often seek medical attention only after experiencing adverse consequences related to the behavior.[8] However, sleep-related sexual behavior is increasingly recognized as more common than initially presumed.

In a study examining sexsomnic behaviors, 75% of individuals who engaged in sexual activity during sleep were male.[9] It remains unclear whether this apparent male predominance reflects a true gender-based predisposition or is influenced by reporting or help-seeking biases.

Parasomnias are more prevalent in childhood and typically decline in frequency with age. While sexsomnia has not been reported in pediatric populations, literature on the condition often includes discussion about non-sexual childhood parasomnias.

Etiology

Triggers for sexsomnic episodes are similar to those for other NREM parasomnias (Table 1).[10]

Table-1: Precipitants of Sexsomnia

Stress
Sleep Deprivation
Fatigue
Alcohol
Other Recreational Drug Use
Circadian Rhythm Disruption
Psychotropic Medications
Obstructive sleep Apnea
Periodic Limb Movement Disorder
Restless Leg Syndrome

It is common for family members to have similar parasomnias thus indicating a genetic component to parasomnias.

It has been hypothesized that alcohol may increase the likelihood of sleepwalking by enhancing the amount of slow-wave sleep along with partial arousals from this sleep stage, leading to semiconscious behaviors.[3]

Characteristics

Sexsomnic episodes predominantly occur during the first third of the night, corresponding to periods of deep NREM sleep. The majority of individuals with sexsomnia have no recollection of these events. In one study, 96% of patients reported complete amnesia for the episode. Among individuals exhibiting sexsomnic behaviors, the most common diagnosis is a disorder of arousal, accounting for 86% of cases. This is followed by obstructive sleep apnea in 14.3% of cases. Marital difficulties are common, including feelings of strangeness, guilt, shame or depression. About a quarter of the cases result in legal consequences as well.[9]

Diagnosis

The diagnosis of sexsomnia is primarily clinical, relying on a detailed history of the patient's sleep-related behaviors. This assessment typically includes information on the specific nature and frequency of the behaviors, as well as relevant personal and family history of parasomnias or other sleep disorders.

Cases of sexsomnia often pose significant diagnostic and therapeutic challenges, highlighting the importance of a multidisciplinary approach to management. Interviews with current or former bed partners are particularly valuable, as individuals with parasomnias typically have limited or no awareness of their nocturnal behaviors, making collateral information essential for accurate assessment.

The summary of diagnostic criteria is provided in Table 2 and 3.[10]

Patients may benefit from an overnight polysomnographic (PSG) evaluation including continuous audio and video monitoring, along with comprehensive electroencephalographic (EEG) recording, to aid in the diagnosis and characterization of sleep-related sexual behaviors.

The *differential diagnoses* for people presenting with symptoms of sexsomnia includes other parasomnias, nocturnal seizures, various psychiatric disorders and paraphilias. In cases where secondary gain is suspected, malingering should also be considered.

Table-2: DSM 5 criteria for NREM sleep arousal disorder

- DSM-5 criteria for NREM sleep arousal disorders and sexsomania subtype of sleepwalking
- Criterion A. Recurrent episodes of incomplete awakening from sleep, usually occuring during the first third of the major sleep episode, accompanied by sleepwalking.
- Criterion B. No or little dream imagery is recalled.
- Criterion C. Amnesia for the episodes is present.
- Criterion D. Clinically significant distress or impairment.
- Criterion E. Disturbance is not attributable to the effects of a substance.
- Criterion F. Coexisting mental or medical conditions do not explain the episodes.
- Diagnosed as "NREM sleep arousal disorders, sleepwalking type. with sleep-related sexual behaviour (sexsomania)"

Table 3: ICSD-3 criteria for disorders of arousal

ICSD-3 criteria for disorders of arousal, including sleepwalking and confusional arousal subtypes.
- Criterion A. Recurrent episodes of incomplete awakening from sleep.
- Criterion B. Inappropriate or absent responsiveness to efforts of others to intervene or redirect the person during the episode.
- Criterion C. Limited or no associated coagnition or dream imagery.
- Criterion D. Partial or complete amnesia for the episode.
- Criterion E. Another sleep disorder, mental disorder, medical condition, medication, or substance use does not better explain the disturbance.

Confusional arousals:
- Criterion A. General NREM disorders of arousal criteria (above) are met.
- Criterion B. The episodes are characterized by mental confusion or confused behaviour that occurs while the patient is in bed.
- Criterion C. There is absence of terror or ambulation out side of the bed.

Sleepwalking:
- Criterion A. General NREM disorders of arousal criteria (above) are met.
- Criterion B. The arousals are associated with ambulation and other complex behaviours out of bed.

Management

Treatments for people with sexsomnia are based primarily on those that have been effective in the treatment of other parasomnias.

The management of sexsomnia requires a comprehensive approach that addresses physical, psychological and, where applicable, legal dimensions affecting both the patient and their bed partner. Treatment typically includes implementation of good sleep hygiene practices, optimization of the sleep environment, stress reduction strategies and avoidance of alcohol and psychoactive substances. During the initial consultation, a psychoeducational intervention can often alleviate many of the psychological distress and relational difficulties experienced by patients and their partners. Risk mitigation strategies may involve practical measures such as sleeping in separate beds or rooms and securing the sleeping environment, including locking bedroom doors.

Sexsomnia is considered to be a sleep disorder that occurs unconsciously and does not depend on desire for other people, sexual dissatisfaction, need for sex or infidelity. Individual and couples/family therapy can be considered in cases where psychological distress persists despite adequate psychoeducation or when the relationship between the patient and other people has become compromised.

Till date, no randomized controlled trials have been performed that assess the efficacy of neuromodulating drugs in the management of sexsomnia. Medications such as benzodiazepines or melatonin may be considered to help regulate sleep architecture and reduce the occurrence of parasomnic episodes.

Patients should be informed about the importance of implementing safety measures to protect all individuals sharing the same sleeping environment, with the goal of preventing physical harm, psychological distress and potential legal repercussions. It is strongly recommended that individuals with sexsomnia avoid sleeping in the same room as others, particularly children or minors.[11]

Challenges to diagnosis and treatment

Several factors influence the likelihood of

individuals with sexsomnia seeking professional help. First, the presence of a bed partner is often essential for the condition to be recognized, as affected individuals typically experience amnesia for the episodes and may remain unaware of their behaviors. Additionally, feelings of embarrassment or shame frequently act as barriers to disclosure and medical consultation. Some individuals may also fail to perceive sexsomnia as a legitimate medical issue, further reducing the likelihood of seeking professional care.[5]

Medico-legal Aspects

In a review of 351 forensic referrals to a sleep center, 41 percent (n = 145) were related to allegations of sexual assault. Among these cases, sexsomnia was the most commonly diagnosed condition, accounting for 42% of referrals. Other diagnoses included disorders of arousal, pharmaceutical toxicity involving zolpidem or zaleplon and sleep deprivation.[11]

The involvement of a forensic psychiatrist may be essential in the comprehensive evaluation of patients with sexsomnia, particularly in medicolegal contexts. Forensic psychiatrists can conduct both general psychiatric and focused psychosexual assessments to identify underlying psychopathology, as well as evaluate the individual's history of violence or problematic sexual behaviors. Their role includes assessing criminal responsibility, particularly in cases where sexsomnia is presented as a defense in legal proceedings. Forensic evaluations may also include other components like EEG, magnetic resonance imaging and video-polysomnography, apart from general medical, psychiatric and neurologic evaluation.

Psychosexual evaluation is crucial for understanding the nature of sexual behaviors occurring during sleep and assessing the presence of paraphilic disorders. Due to the associated social stigma and potential legal consequences, individuals with paraphilia may be reluctant to disclose their sexual preferences, which can further complicate the diagnostic process.

The question of whether sexsomnic behaviors are entirely automatic and involuntary, or instead reflect disinhibited actions in the context of underlying paraphilic or opportunistic sexual interests, remains unanswered. It is therefore essential to obtain collateral information from previous sexual partners and bed partners to corroborate the individual's self-reported sexual interests and behaviors, including those occurring during sleep, wherever feasible.[10]

Moreover, clinicians must remain vigilant for the possibility of malingering, which may occur more frequently in this context than with other parasomnias. Individuals accused of sexual offenses may have a strong incentive to feign a sleep disorder in an effort to avoid criminal liability.

Two relevant defenses pertaining to the criminal responsibility of individuals with sexsomnia in the *United States* include the *automatism* or unconsciousness defense and the not guilty by reason of *insanity defense.*The forensic psychiatrist should be capable ofarticulating the nature and extent of an individual's cognitive and volitional impairments in cases of genuine sexsomnia, as they relate to the person's ability to understand and control their behavior during the episode. In jurisdictions that apply the *M'Naghten rule* for legal insanity, the forensic psychiatrist may be required to explain that the defendant's capacity to understand the nature of the act and to comprehend its wrongfulness may have been significantly impaired at the time of the alleged offense. A criminal responsibility evaluation would also consider the role of a subject's alcohol use. In cases of frank intoxication prior to sleep, it is likely that alcohol use will invalidate an insanity defense in many jurisdictions on the basis of voluntary intoxication.[10]

In *Canada*, sexsomnia is legally recognized as a mental impairment that can lead to a verdict of not guilty by reason of mental impairment. In *Australia*, individual states have established legislative frameworks to address cases involving offenders who are deemed not criminally responsible due to the influence of specific mental health disorders. These legal provisions acknowledge that certain psychiatric conditions can impair an individual's capacity for criminal responsibility, thereby affecting their culpability for actions that would otherwise constitute criminal offenses. However, there is no published authority in Australia for the proposition that sexsomnia is a mental impairment capable of giving rise to a verdict of not guilty by reason of mental impairment.[12]

In *India*, sexsomnia as a defense in criminal

cases, specifically related to sexual offenses, is not explicitly addressed in the law. The Bharatiya Nyaya Samhita Section 22, derived from the old Section 84 of the Indian Penal Code, provides a defense against criminal charges for individuals who, due to unsoundness of mind, were incapable of understanding the nature of their actions or recognizing that their actions were wrong or contrary to law at the time of the offense.The validity of sexsomnia as a defense under such legal provisions depends on establishing the individual's mental state at the time of the act and demonstrating that they were incapable of understanding the nature of their actions or that they were wrong.

Conclusion

With increasing recognition of sexsomnia as a legitimate NREM-related parasomnia, both individuals with a genuine sleep disorder and those attempting to evade criminal responsibility may increasingly invoke this diagnosis in legal proceedings. This underscores the need for careful clinical and forensic evaluation to distinguish authentic cases from potential malingering. The assessment of sexsomnia often necessitates interdisciplinary collaboration, particularly between forensic psychiatrists and sleep medicine specialists, to ensure accurate diagnosis and informed legal interpretation. Further research is essential to understand the neurophysiological mechanisms, risk factors and prevalence of sexsomnia in both clinical and general populations. Randomized controlled trials are also warranted to evaluate the efficacy of pharmacological and non-pharmacological interventions. In the forensic domain, clearer medicolegal guidelines and standardized protocols for expert evaluation are needed to navigate the evolving clinical and legal challenges posed by this rare but significant parasomnia.

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Case Report

Endoxifen in Child and Adolescent Psychiatry: Experience from Indian Clinical Setting — Case Series

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Introduction

Endoxifen, an active metabolite of tamoxifen, functions as a protein kinase C (PKC) inhibitor and selective estrogen receptor modulator (SERM). Its mechanism offers a novel route to psychopharmacological intervention, distinct from traditional monoaminergic agents. In December 2023, it received approval by the Drug Controller General of India (DCGI) for the treatment of manic and mixed episodes of bipolar affective disorder (BPAD) in adults, following growing evidence of its efficacy in mood stabilization and impulsivity management.[1]

PKC plays a crucial role in intracellular signaling pathways implicated in affective instability, neuronal excitability, and aggression. Dysregulation in PKC activity has been associated with manic states, emotional dysregulation, and impulsivity—symptoms frequently observed across diagnostic boundaries in child and adolescent psychiatry (CAP).

Despite its use in adults, its efficacy remains under investigation, and there is no established evidence base in the pediatric population. This case series explores the off-label use of endoxifen in three adolescents presenting with severe, treatment-resistant emotional and behavioral dysregulation. Each individual had a complex clinical profile and had shown limited response to conventional pharmacological interventions. Following the introduction of endoxifen, all cases demonstrated notable clinical improvement in affect regulation, impulse control, and overall functioning, with minimal adverse effects.

CASE 1

Oppositional Defiant Disorder (ODD) with Internet Addiction Disorder (IAD)

A 16-year-old boy was referred for persistent oppositional behavior, emotional outbursts, and screen overuse exceeding 12–14 hours daily. He demonstrated frequent defiance, argumentativeness, irritability, and verbal aggression, especially when access to digital devices was limited. He also exhibited disturbed sleep, academic decline, and reduced in-person social interaction.

His treatment history included multiple pharmacological interventions: risperidone, aripiprazole, sertraline, oxcarbazepine, atomoxetine, and propranolol. These resulted in either partial improvement or intolerable side effects (e.g., sedation, weight gain). Behavioral therapy and digital detox efforts had minimal success.

Due to persistent dysregulation, endoxifen was initiated at 8 mg/day, which was gradually increased to 24 mg/day. Within four weeks, caregivers noted a marked reduction in oppositional episodes, better mood, and voluntary decrease in screen usage. His frustration threshold increased, and his sleep and daily routine were partially stabilized. No sedation, weight changes, or extrapyramidal symptoms were reported.

CASE 2

Autism Spectrum Disorder (ASD) with Emotional Lability

A 15-year-old boy diagnosed with Autism Spectrum Disorder presented with frequent emotional meltdowns, self-injurious behavior (e.g., head banging, hand biting), and intense reactivity to minor changes in environment or routine. While he demonstrated average language and cognitive skills, he struggled with emotional modulation, transition anxiety, and social rigidity.

Past medication trials included risperidone, aripiprazole, thioridazine, divalproex, and methylphenidate, administered with adequate dose and duration, but with limited efficacy.

Given persistent emotional volatility, endoxifen was added at 8 mg/day, which was gradually doubled within 2–4 weeks. Parents reported a significant drop in aggression, emotional lability, and impulsivity. No side effects were noted, and blood parameters, including liver function tests, remained within normal limits.

CASE 3

Bipolar Affective Disorder (BPAD) with ADHD

A 16-year-old boy had a diagnosis of BPAD with comorbid ADHD. He had a history of hypomanic episodes with grandiosity, aggression, and risky behavior, followed by depressive phases, where he reported hopelessness, worthlessness, and suicidal thoughts. His longstanding symptoms of hyperactivity, impulsivity, and inattention compounded his functional impairment.

He had previously been prescribed lurasidone, oxcarbazepine, risperidone, sertraline, and aripiprazole in various combinations. While these medications mildly stabilized his mood initially, his emotional state and behavior mostly remained erratic.

During a recent relapse, endoxifen was started at 8 mg/day, which was then increased to 16 mg/day. Over the next few weeks, he demonstrated improved affective control, reduced aggression, and better overall functionality. There were no reports of sedation, extrapyramidal symptoms, or metabolic side effects.

Discussion

To the best of our knowledge and literature search, this is the first documented case series reporting endoxifen use in child and adolescent psychiatry. All three adolescents presented with affective instability, impulsivity, and resistance to conventional pharmacological approaches. Introduction of endoxifen was followed by rapid clinical improvement, highlighting its potential across diverse neurodevelopmental and mood disorders.

The mechanism of action—inhibition of PKC and modulation of estrogen receptors—offers a unique pathway that may influence limbic reactivity, executive functioning, and emotional regulation. Ahmad et al. demonstrated that endoxifen significantly reduced Young Mania Rating Scale (YMRS) scores in adult patients with mania, with a favorable side effect profile.[2] In a separate case series, Banerjee and Ray reported its efficacy in adults with borderline personality disorder and predominant impulsivity—traits that overlap phenotypically with adolescent mood and behavioral dysregulation.[3]

In our series, the medication was well tolerated in all patients, even in those with prior sensitivity to antipsychotics or mood stabilizers. Moreover, the improvements occurred despite polypharmacy, suggesting that endoxifen may have additive or synergistic effects when used judiciously. Importantly, clinical change extended beyond symptom control to functional gains—social, academic, and behavioral.

This case series has several limitations. We did not use any standardized rating scales to quantify improvement. Outcomes were based on clinical impressions and caregiver reports. All patients were on concurrent psychotropic medications, raising the possibility of confounding effects. Moreover, long-term safety and efficacy data for endoxifen in pediatric populations are not yet available. The off-label use of endoxifen, thus calls for ethical and regulatory caution. These preliminary findings require confirmation in prospective, controlled studies.

Conclusion

Endoxifen may represent a novel and effective adjunct in managing treatment-resistant emotional and behavioral dysregulation in adolescents. Its rapid onset, tolerability, and broad-spectrum applicability make it an attractive candidate for further study. This case series offers an important starting point, laying

the groundwork for systematic research to evaluate its safety, dosing, and therapeutic value in child and adolescent psychiatry.

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