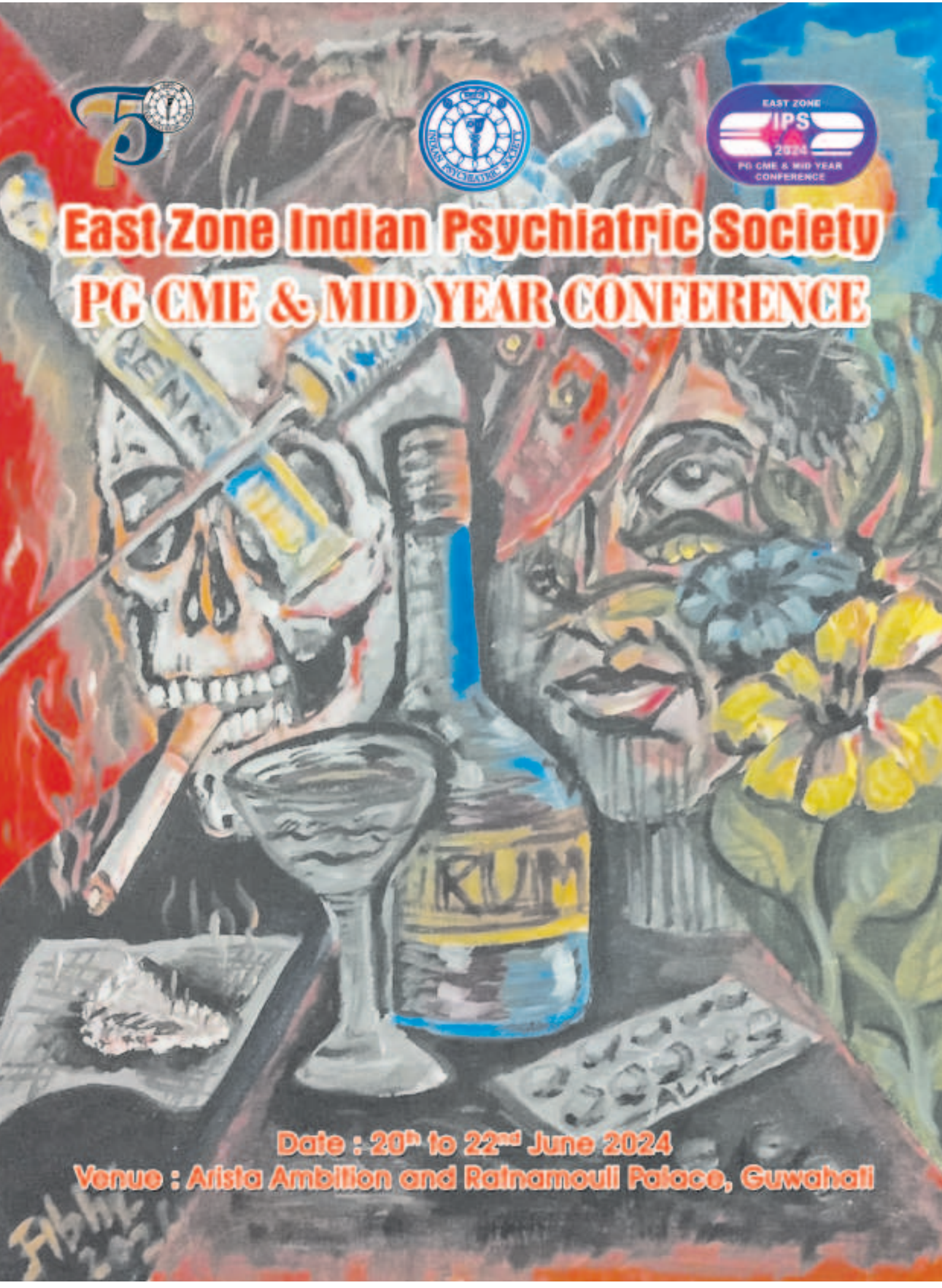
East Zone Indian Psychiatric Society
PG CME & MID YEAR CONFERENCE
RUM
Date : 20th to 22nd June 2024
Venue : Arista Ambition and Ratnamouli Palace, Guwahati

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Dr. Jayanta Dutta
(Imdt. Past Secretary)

MESSAGE

I am very happy to know that PG CME of EZ is hosted by Aasam State Branch. I am confident that Dr Bijoy Choudhary as Organizing Chairperson and you as Organizing Secretary will make it a great success. Aasam State Branch has always remained a great host.

I also compliment Dr R. K. Lenin Singh, president, EZ and Dr Jayant Dutta, Hon. Secretary, EZ for taking such initiative for PG students. Program is also chalked down very well. I wish the program a great success.

It is also very nice step that you are coming our with a souvenir on this occasion which will store the memories of the event.

Best wishes again.

Dr. Laxmikant Rathi
Hony. President
Indian Psychiatric Society

MESSAGE

Esteemed Colleagues and Honoured Guests

Its gives me immense pleasure to know that the East Zone Indian Psychiatric Society Mid-Year Conference will be held in Guwahati from 21st and 22nd June 2024.

The theme for this year's conference Addictive Disorders: Current and Future perspectives is apt taking into account the burden of addiction in north east which is ever increasing. I am sure that the scientific deliberation to be given by very learned faculty members will immensely help us in further managing the cases of addiction.

It is a matter of pride that the organizing team is headed by the dynamic Dr Bijoy Choudhuri and Dr Anweshak Das. I am sure that they will make this mega event an memorable one. On behalf of Indian Psychiatric Society I wish IPS ASB and the organizing team best wishes for a grand success

On Behalf of Indian Psychiatric Society, we would be delighted if you take part in this much awaited event and request your gracious presence.

Long live IPS
Long live east Zone IPS
Long live IPS ASB

Dr Amrit Pattojoshi
Hony Secretary
Indian Psychiatric Society

GOODWILL MESSAGE

It is a great pleasure to learn that 'Indian Psychiatric Society Assam State Branch' is organizing the 'East Zone Indian Psychiatric Society PG CME' and 'Mid-Year Conference' on 20th to 22nd June 2024, at Guwahati, Assam and that a souvenir will also be released for the same.

I on behalf of the East Zone IPS would like to appreciate the hard work and dedication of the organizing team lead by Dr. Bijoy Pratim Choudhuri and Dr. Anweshak Das.

I am sure that all our delegates will be enriched by the scientific contents and the usual hospitality of Assam.

Wishing all the delegates an enjoyable and memorable 'Mid Year Conference 2024'.

Long live Indian Psychiatric Society.

Long live East Zone, Indian Psychiatric Society.

(Dr. R. K. Lenin Singh)
President
East Zone, Indian Psychiatric Society.

MESSAGE

Dear Esteemed Colleagues, Honoured Guests and Delegates

It is a proud privilege to announce that the East Zone Indian Psychiatric Society Mid-Year Conference will be held in Guwahati from 21st and 22nd June 2024.

With great anticipation, On behalf of East Zone Indian Psychiatric Society I invite everyone to take part in this conference which will be organized under the able guidance of Indian Psychiatric Society Assam State Branch

The theme for this year's conference Addictive Disorders: Current and Future perspectives is apt taking into account the burden of addiction in north east which is ever increasing. I am sure that the academic program planned will be a great platform to learn and exchange ideas in the field of addiction psychiatry

I am sure that the organizing team headed by Dr Bijoy Choudhuri will take every measure to make this conference a grand one. On behalf of East Zone Indian Psychiatric Society I wish IPS ASB and the organizing team best wishes for a grand success.

On Behalf of East Zone Indian Psychiatric Society, we would be delighted if you take part in this much awaited event and request your gracious presence.

Long live IPS

Long live east Zone IPS

Long live IPS ASB

Dr Jayanta Dutta
Hony Secretary
East Zone Indian Psychiatric Society

MESSAGE

Esteemed Colleagues and Honoured Guests

Greetings from Assam

With great honour and privilege, we extend our warm and cordial invitation to you and your family to the East Zone Indian Psychiatric Society Mid-Year Conference on 21st and 22nd June 2024 at Guwahati Assam.

The theme for this year's conference is being kept as Addictive Disorders: Current and Future perspectives. Addictive disorders has been a huge burden in India particularly the north eastern regions. Apart from drugs and substances, behavioural addictions like screen addiction, internet addiction, gambling disorders have been on the rise and have added to the burden of addictive disorders. With experienced faculty members giving a talk on their respective topic based on the theme of the conference, I am sure that this academic feast will enrich our knowledge on this subject.

We would be delighted if you take part in this much awaited event and request your gracious presence. I have great faith in the organizing team headed by Dr Bijoy Choudhuri that they will make this event a memorable one.

Long live IPS

Long live east Zone IPS

Long live IPS ASB

Dr Deepanjali Medhi
President, IPS ASB

MESSAGE

On behalf of the members of IPS-Assam State Branch, I am pleased to extend the legendary hospitality of our state, to all delegates of IPS East Zone PG CME and Mid-year Conference. It is a matter of joy and privilege for us, to host these twin events, at Guwahati. Assam and the Northeastern states have long battled the effects of large-scale addiction to various addictive substances, proximity to the ill-famed 'golden triangle' of drug trafficking being just one of the propagating factors. Guwahati, being the bustling and rapidly populated city that it has become, and being the gateway to the entire North east, bears constant testimony to the menace of addictive disorders. The theme of this Mid-year Conference, "Addictive Disorders: Current and Future Perspectives", is thus, very apt. I hope the atmosphere of warmth and camaraderie at the twin events, will lead to useful learning for all.

Best wishes to all of us! May IPS grow from strength to strength!

Dr. Simanta Talukdar
General Secretary, IPS-ASB

MESSAGE

Esteemed Delegates and honoured guests , it gives me immense pleasure and privilege to welcome you all to the Indian psychiatrist society ,Eastern zone postgraduate CME, and Mid year conference to be held at Guwahati between 20th -22nd June 2024. The city Guwahati being the gateway to the North East of India is famous for it's varied attractions,which I am sure you will have the opportunity to experience.

I assure you that the organising committee , has tried to curate the various aspects of the conference to match your taste to the best possible extent. The theme of the Mid year conference being addictive disorders: current and future perspective, is very relevant, especially in context of this part of our country.

I wish you all a very pleasant stay here and hope that you go home much enriched with knowledge and beautiful memories.

I take full responsibility and apologise in advance, for any kind of unwanted lapses that might have inconvenienced you in anyway.

Long Live Indian psychiatrist society.

Sincerely,

Dr Bijoy Pratim Chaudhuri
Organising Chairperson

Dated : 11th june, 2024 .

MESSAGE

Esteemed Colleagues and Honoured Guests

Greetings from Assam

With great honour and privilege, we extend our warm and cordial invitation to you and your family to the East Zone Indian Psychiatric Society Mid-Year Conference on 21st and 22nd June 2024 at Guwahati Assam.

We extend our heartfelt gratitude to East Zone IPS and IPS ASB for having faith in us and believing in us to take the responsibilities of organizing the conference. The theme for the conference Addictive Disorders: Current and Future perspectives is very apt taking into perspective the north east regions. We hope the deliberation on theme by the experts will help us immensely in our clinical practice and further upgrade our skills.

We welcome you all to participate in the MID YEAR CONFERENCE and take part in this scientific and academic fest. We would be delighted if you take part in this much awaited event and request your gracious presence.

Long live IPS

Long live east Zone IPS

Long live IPS ASB

Dr Anweshak Das
Organizing Secretary

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Creativity Section

Cinema and Psychiatry

Dr. Bijoy Pratim Chaudhuri (MD)

Importance of cinema (films) :

In relation to mental health issues cinema exercises a significant influence on the perceptions of an audience.

It is the most potent and influential form of mass communication.

Cinema takes into account the entire perceptive experience by capturing attention specially from the efects of visually stimulated feelings that evoke a varied range of emotions.

Interaction between the film maker and the viewer :

Film makers attempt to accomplish a rich and overwhelming visual experience and when mixed with sound stimulus makes the viewer enter a state of absorption, attention and concentration and an ultimate dream experience.

Viewer gets into the story along with the unique attributes and the characters on the screen.

Cinema transcends the theater,makes the viewer totally pre occupied with the images and the sound, thus becoming the most important from of mass communication.

Invention of the movie camera and creation of this artistic form of cinema transposes the viewer to each scene and makes him react immediately to the screen event and the atmosphere initiated by the “make believe” characters which surrounds the viewer- while watching the movie.

The audience experience and process mentally the same emotional and factual stuff,which the actor see and feel in the movie.

Interaction between the film maker and the viewer (contd…) :

The director/film maker,in order to initiate an emotional response, and to enlarge its magnitude,carefully unfolds the plot and the psychological profiles of the characters by the precise and meticulous filming by the camera which records the happenings.

By the selection of the locations, movie sets,actors,costumes,sound and lights the director contributes to the visual image of film making and infact constructs the movie and also the viewers reality

Social impacts of the cinema :

Cinema has become an integral part of the present culture for more than a hundred years now.

It represents a mirror reflecting us humans in almost our everyday life.

In a movie the barriers between the viewer and the technical aspects of the movie's projection became es invisible as the viewer absorbs the images into his/her concise us mind.

A better movie can cause the viewer to experience some sort of dissociative condition where the usual and routine existence in time gets suspended for a while.

Cinemas capture the attention,enchant the viewer to an extent that it can conquer the consciousness and the experience of the individual human being.

Cinema can become a pervasive and omni present element of our living in society, and this applies to an audience of any age, gender, nationality, background or culture.

Cinema and its impact on mental disorder

Cinema can influence the perception of an audience and the general public towards mental disorders, due to a lack of awareness and problems associated with it.

On the positive side certain movies do potray likable and appealing aspects about those suffering from mental disorders; mental health processionals are also portrayed as being affable and sensitive.

Examples:

"Three faces of eve"; "david and lisa"; "ordinary people"

On the negative side many movies potray the victims of mental disorders as being aggressive, dangerous and unpredictable; mental haelth professionals are often described as being arrogant, aloof, cold hearted, unemotional, authoritative, passive, apathetic and manipulative. (weeding and niemec)

Examples :

"psycho" (1960), supported and reinforced confusion about relationship between schizophrenia and dissociative identity disorder (multiplpersonality disorder)

Cinema and its impact on mental disorder (contd…)

"friday 13th"(1979), and "nightmare on elm street" (1980) accentuate myths about person discharged from the psychiatric ward, who exhibit extremely aggressive and brutal behavior.

The "exorcist" (1973) suggest that mental illness is equivalent to being possessed by the devil.

"one flew above the cuckoo's nest" (1975) promoted anti-psychiatry sentiment, with the mental hospital being reduced to a jail metaphor, where patients are deprived of all human rights, almost as if being in prison.

This kind of movies can creat more biases and misconceptions about psychiatry and contribute to the stigmatization of the mentally ill person.

The fact is that cinema through the presentation of psychological phenomena via images,colors,sounds etc is capable of depicting a realistic, vivid, lively and astonishingly a believable psychological state of mind, and the changes in a persons mental state. This encourages and models the viewers thoughts and feelings and may make them believe that they experience the same happenings as presented on the screen.

Sigmund freud and cinema :

Never a great enthusiast about cinema being a medium in depicting mental illness.

In the movie "secrets of the soul" (1926) the german director g pabet dramatized the psycho analytical theory of freud by depicting a sequence of dream with multiple levels of super imposition, much to the objection of freud.

According to freud movies failed to present a satisfactory degree, as to how vivid, realistic, truthful and believable our abstract thoughts and fantasies maybe.

This skeptical attitude and mistrust regarding movie making was maintained by freud until the end of his life.

Examples of mental disorders depicted in popular cinema

Indian Cinema :

'Barfi' - Autistic Disorder

'Devrai' - Schizophrenia (2004) by Sumitra Bhave & Sunil Sukthankar

'Anniyan' - Dissociative identity Disorder.

'Shakha Proshakha' - General mental illness owing to Physical injury.

Examples of mental disorders depicted in popular cinema :

Schizophrenia

'Some voices (2000) by Simon Cellian James.

'A Beautiful Mind (2001) by Ron Howard

Obsessive - Compulsive Disorder

"As good as it gets (1997) by James L Brook

Examples of mental disorders depicted in popular cinema (contd…) :

B) Western Cinema for specific Disorder

Attention Deficit Hyperactive Disorder

'Dennis the Menace (1993) by Nick Castle

Borderline Personality Disorder or Psychotic depression.

Girl, interrupted (1999) by James Mang

Examples of mental disorders depicted in popular cinema (contd…)

B) Western Cinema for specific Disorder

Somatic Complaints

"Hannah and Her Sisters" (1986) by Woody Allen

Hypomania, Bipolar Disorder.

"Mr. Jones"(1993) by Mike Figge Autism

"Rainman" (1988) by Barry Levinson.

Examples of mental disorders depicted in popular cinema (contd…)

Mental State Examination

"The lost Weekend" (1945) by Billy Wilder.

"The snake pit" (1948) by Anatole Litvak

"Harvey" (1950) by Henry Koster

"Frances" (1982) by Graeme Clifford.

"The Glass Menagerie" (1987) by Paul Newman.

Examples of mental disorders depicted in popular cinema (contd…)

The Madness of King George" (1994) by Nicholas Hytner

"Twelve Monkeys"

"Lone Star" (1996) by John Saylee.

"She is so lovely" (1997) by Nick Cassavates.

"As good as it gets" (1997) by Jame L. Brooke.

"Requiem for a Dream" (2000) by Darren Aronofsky

Examples of mental disorders depicted in popular cinema (contd…)

Diagnoses

Harvey (1950) by Henry Koster

Betty Blue (1986) by Jean-Jacques Beineix

The Naked Lunch (1991) by David Cronenberg

Jerry Maguire (1996) by Cameron Crowe

Lone Star (1996) by John Sayles

Trainspotting (1996) by Danny Boyle

Fight Club (1999) by David Fincher

A Beautiful Mind (2001) by Ron Howard

Examples of mental disorders depicted in popular cinema (contd…)

The Aviator (2004) by Martin Scorsese

Black Swan (2010) by Darren Aronofsky

Silver Linings Playbook (2012) by David O. Russel

Examples of mental disorders depicted in popular cinema (contd…)

Doctor patient interactions

Frances (1950) by Graeme Clifford

M.A.S.H. (1970) by Robert Altman

One Flew Over the Cuckoo's Nest (1875) by Milos Forman

Ordinary People (1980) by Robert Redford

Still of the Night (1982) by Robert Benton

What about Bob ? (1991) by Frank Oz

Examples of mental disorders depicted in popular cinema (contd…)

Strangers on a Train (1951) by Alfred Hitchcock

The Caine Mutiny (1954) by Edward Dmytryk

Play Misty for Me (1971) by Clint Eastwood

A Clockwork Orange (1971) by Stanley Kubrick

Taxi Driver (1976) by Martin Scorsese

King of Comedy (1982) by Martin Scorsese

Zelig (1983) by Woody Allen

Examples of mental disorders depicted in popular cinema (contd…)

Personality Disorders

Fatal Attraction (1987) by Adrian Lyne

Single White Female (1992) by Barbet Schroeder

Swimming with Sharks (1994) by George Huang

Bullets over Broadway (1994) by Woody Allen

The Talented Mr. Ripley (1999) by Anthony Minghella

Girl, Interrupted (1999) by James Mangold

Summary :

Cinema has been a source of entertainment & Recreation for Decades

* Usually the themes depicted in films have roots in society itself.
* CINEMA featuring Psychiatrists and the mentally ill are abound.
* Most early movies tended to be negative, contributing to the stigmatization of mental

illness, or overly positive, furthering misinformation amongst the general public.

* Nowadays there is an increasing number of films which are able to provide more realistic depictions of Psychopathologic Disorders and are more reasonable and therefore may be suitable for psychiatric teaching purposes.
* Over the last 3-4 Decades Psychiatry trainers have attempted to use films as an educational tool for teaching medical students & Psychiatry Resident.
* Films can be used to engage student's attention, emphasize learning points in lectures and illustrate symptoms of a Disorder.
* Cinema is not only an important source of entertainment, but also an educational tool and a significant influence on people's altitude towards mental illness.
* We as a body of Psychiatrists should be able to take initiative, and be the first to point out & give clarification to the public on any movies that depict the false/ or negative aspects of the mentally ill.

I am glad indian psychiatric society over the years have shown their dynamism towards this end through various activities.

Thanking you all for your patient hearing

Long live Indian Psychiatry Society
Long live Indian Psychiatry society
Assam State Branch.

Dr. Bijoy Pratim Chaudhuri (MD)
Sr. Consultant Psychiatrist,
Mindcare Neuro Psychiatric Clinic & Research Centre, Maligaon, Guwahati -11

Beyond Substances: "The Rise of Behavioural Addiction"

Dr. Sahil Agarwal[1], Prof. Dr. Deepanjali Medhi[2]

The world has witnessed a concerning trend that has been slowly but steadily taking hold - the rise of behavioral addictions. Behavioral addiction, also known as process addiction, refers to the compulsive engagement in rewarding behaviours despite adverse consequences. Unlike substance addiction, which involves dependency on chemical substances, behavioural addiction centers around activities that are inherently pleasurable, such as gambling, internet use, gaming, shopping, and sexual activities. These behaviours become problematic when they dominate a person's life, leading to significant impairments in social, occupational, and other important areas of functioning. While substance abuse has long been recognized as a significant public health issue, the insidious nature of behavioral addictions often flies under the radar, affecting individuals and communities in ways that are just as profound.

The concept of behavioral addiction emerged in the late 20th century, paralleling advancements in understanding substance addiction. While substance-related addictions have long been a focus of clinical research and treatment, the DSM-5 has expanded its scope to include several types of behavioral addictions. One of the primary behavioral addictions acknowledged in the DSM-5 is Gambling Disorder. This condition is characterized by a persistent and recurrent pattern of gambling behaviour, leading to significant impairment in various aspects of an individual's life, including personal, social, and occupational functioning. Another behavioral addiction recognized in the DSM-5 is Internet Gaming Disorder. This condition is marked by a preoccupation with online gaming, resulting in a loss of control, withdrawal symptoms, and the prioritization of gaming over other important life activities. The DSM-5 also includes provisions for the potential inclusion of other behavioral addictions, such as Compulsive Sexual Behaviour Disorder and Compulsive Buying Disorder, which are currently categorized as conditions requiring further research and study.

Pathological gambling affects approximately 1-3% of the global population. Internet addiction rates range from 1.5% to 8.2%, with higher rates in countries with extensive internet access. Gaming addiction, particularly among adolescents and young adults, is a growing concern, with prevalence rates between 2-5%. Shopping addiction affects about 5-8% of adults,

while sexual addiction estimates range from 3-6%. Studies suggest that 1-4% of Indian adolescents exhibit problematic internet use. Gambling, although culturally stigmatized, is prevalent, with 1-2% of the Indian population engaging in pathological gambling.

The causes of behavioural addictions are complex and multifaceted, involving genetic, psychological, and environmental factors. At the core of behavioral addictions lies a fundamental disruption in the brain's reward and motivation systems. Neuroimaging studies have shed light on the specific regions of the brain that are implicated. The ventral striatum, a key component of the brain's reward circuitry, has been shown to exhibit heightened activity in individuals with addictions, whether they involve substances or behavioral compulsions. This region, which includes the nucleus accumbens, plays a crucial role in the anticipation and experience of pleasure, fuelling the cycle of addiction.

Alongside the disruption in the reward system, behavioral addictions also involve impairments in cognitive control and decision-making. The prefrontal cortex, which is responsible for executive functions, such as impulse control and risk assessment, often displays altered activity in individuals with addictive disorders. This dysregulation can lead to a diminished ability to resist urges, make rational choices. Family history of addiction increases susceptibility. Psychological Factors such as depression, anxiety, and low self-esteem are common underlying issues. Environmental factors like easy access to addictive behaviours, social acceptance, and cultural influences play significant roles. Additionally, socioeconomic factors, such as income inequality, unemployment, and limited access to mental health resources, have exacerbated the problem, particularly among vulnerable populations.

The symptoms of behavioral addiction can be subtle and insidious, making early intervention and diagnosis a critical challenge. Individuals may exhibit an intense preoccupation with their addictive behaviour, a loss of control over their action; develop tolerance i.e., increasing the intensity or frequency to achieve the desired effect and a continued engagement in the behaviour despite negative consequences. They may experience withdrawal symptoms, such as irritability, anxiety, or depression, when deprived of their compulsive behaviour.

The effects of behavioral addiction on Indian society are far-reaching. Individuals struggling with these addictions often experience a deterioration in their personal, professional, and social lives. Relationships suffer, productivity plummets, and financial ruin looms large as the addict's focus becomes singularly fixed on their compulsive behaviour. The ripple effects extend beyond the individual, as families and communities grapple with the strain of supporting loved ones trapped in the throes of addiction. Socially, these addictions can lead to isolation and increased risk of legal problems, particularly in gambling and compulsive sexual activities.

Addressing the growing challenge of behavioral addiction requires a multifaceted pronged approach that combines education, prevention, and comprehensive treatment strategies. Healthcare professionals must be equipped with the knowledge and resources to recognize and effectively manage these

conditions. Although no medications are specifically approved for behavioral addictions, antidepressants, mood stabilizers, and opioid antagonists like naltrexone have shown efficacy in symptom reduction. Psychotherapy like Cognitive-behavioral therapy (CBT) helps individuals identify and modify maladaptive thought patterns and behaviours. Motivational interviewing can enhance treatment engagement. One promising avenue for intervention is the integration of mindfulness-based therapies into traditional treatment models. By cultivating self-awareness and emotional regulation skills, individuals can learn to manage their impulses and develop healthier coping mechanisms. Support Groups such as Gamblers Anonymous provide critical peer support for recovery. Involving family members through family therapy helps address relational dynamics that contribute to or sustain addictive behaviours. It is also essential to address the underlying societal factors that contribute to the rise of behavioral addictions. Initiatives aimed at improving socioeconomic conditions, enhancing digital literacy, and promoting healthy, balanced lifestyles can all play a crucial role in prevention and early intervention. Engaging with communities, schools, and religious institutions can further amplify these efforts and foster a culture of understanding and empowerment.

As we navigate this emerging challenge, it is crucial to remember that behavioral addiction is not a sign of weakness or moral failings, but rather a complex and treatable condition that requires compassion, support, and evidence-based interventions. By working together as a society, we can empower individuals, families, and communities to reclaim their lives and break free from the shackles of behavioral addiction, paving the way for a healthier, more resilient future for all.

1= Post Graduate Trainee,

2= Professor and Head, Department of Psychiatry, GMCH, Guwahati

NCORD

Shyamanta Das[1], Dyutimitra Sarmah[2]

Background

During the 33rd Annual Conference of the Indian Psychiatric Society, Assam State Branch 2023, we discussed on "Assam: the opioid epidemic and the way forward." While Dr Sushil Agarwal had outlined the treatment part, Dr Utpal Bora drew our attention to the existing scenario. It was quite obvious that to deal with this massive problem, we need a multidisciplinary approach.

National Narcotics Coordination Portal (NCORD)

NCORD is such an approach that stands for the National Narcotics Coordination Portal. Let us begin with the pledge, 'Say Yes to Life, No to Drugs'.

The multiplicity of stakeholders in Drug Law Enforcement has necessitated coordination between various agencies on real time basis. The Ministry of Home Affairs has constituted a four-tier coordination mechanism for increasing coordination amongst the nationwide stakeholders from grass root level to apex level and effectively combating the menace of drugs. The Apex NCORD (chaired by Union Home Secretary), Executive NCORD (chaired by Special Secretary, Internal Security), State NCORD (chaired by State Chief Secretary), and District NCORD (chaired by District Magistrate) are four pillars of mechanism. In addition to this 04-tier structure monthly NCORD meetings are chaired by the Director General, Narcotics Control Bureau (NCB). This mechanism aims to bring all agencies on supply, demand and harm reduction side under one umbrella.

Supply reduction

Department of Revenue (https://dor.gov.in), Central Bureau of Narcotics (http://www.cbn.nic.in), Government Opium & Alkaloid Factories (http://goaf.gov.in), Directorate of Revenue Intelligence (https://dri.nic.in), Central Board of Indirect Taxes & Customs (https://www.cbic.gov.in), and Financial Intelligence Unit

(https://fiuindia.gov.in) joins hands to combat supply reduction.

Demand reduction

Ministry of Social Justice and Empowerment (https://socialjustice.gov.in), National Commission for Protection of Child Rights (https://ncpcr.gov.in), and Nasha Mukt Bharat Abhiyaan (NMBA) (https://nmba.dosje.gov.in) come together in order to address the demand reduction.

Harm reduction

Ministry of Social Justice and Empowerment (https://socialjustice.gov.in), National Commission for Protection of Child Rights (https://ncpcr.gov.in), and National Drug Dependence Treatment Centre (https://www.aiims.edu/en/departments-and-centers/specialty-centers.html?id=414) are the agencies to deal with harm reduction.

Department of Psychiatry, Dhubri Medical College Hospital

We in the Department of Psychiatry of the Dhubri Medical College Hospital, Dhubri, Assam are participating in this endeavour of NCORD. Associate Professor and Head of the Department, Shyamanta Das attended two such NCORD meetings on 29 July 2023 and 10 August 2023 so fat chaired by Hon'ble Chief Minister and District Commissioner respectively. On 30 August 2023, Assistant Professor, Dr. Sonit Kalita and Registrar, Dr. Dhruba Jit Boro attended an awareness programme on narcotics among the e-rickshaw pullers in Dhubri town at the Office of the Joint Director of Health Services (JDHS) and talked about the harmful effects of narcotics and their treatment and also how to prevent oneself from getting engaged in such kind of activities. Dr. Boro was present in the meeting on 13 September 2023 chaired by Additional Deputy Commissioner (Health).

Events

NCB regularly organises online and offline events such as drug disposal, international day against drug abuse, international meetings, drives on digital solutions to monitor problems of drug trafficking, drives for arrest of absconders, etc.

Resources

The resources include World Drug Reports, United Nations Office on Drugs and Crime (UNODC), the International Narcotics Control Board (INCB) Annual Report, National Policy on Narcotic Drugs and Psychotropic Substances (NDPS), references, publications, and National Integrated DAtabase on Arrested Narco-offenders (NIDAAN).

About Nar-K9

National Narcotics Canine Pool (Nar-K9) was inaugurated by the Hon'ble Union Home Minister as a National Asset during the 'National Conference on Drug Trafficking and National Security' held at Chandigarh on 30-31 July, 2022. A pool of Nar-K9 along with dog handlers/

assistant dog handlers are being provided to NCB by the Border Security Force (BSF), Sashastra Seema Bal (SSB) and Assam Rifles. As-on-date, Nar-K9 squads are available at facilities in Delhi, Jammu, Ahmadabad, Kolkata, Mumbai, Imphal, and Chandigarh while it is under advance stages of establishment in Guwahati, Bangalore, and Chennai. NCB Zonal Directors have been designated as Nodal Officers for all practical purposes of K9 Squad under guidance of Regional Deputy Director General (DDG's) in their respective Zones.

Manas

'Manas', a National Narcotics Call Centre was formed which is working as a communication bridge between all agencies and the public (Tele Manas helpline number: 14416).

International cooperation

Illicit drug trafficking is a major transnational organised crime with the potential to undermine national security. The growing nexus between drug smugglers and terrorist groups is a serious concern. Such complex security concerns can only be dealt with holistic and cooperative relations with all other nations, who are also facing such serious concerns. NCB, India shares cordial and friendly relations with international drug law enforcement agencies worldwide on drug supply reduction. The Director General (DG), NCB is the competent authority for controlled delivery operations in India and abroad. It already has 17 memoranda of understanding (MOUs), 28 bilateral agreements, and 49 extradition treaties.

Awareness

The misuse and abuse of prohibited and prescription drugs amongst youth is a major health problem also identified internationally. The national survey of drug dependence published in 2019 explains the gravity of situation. NCB shares responsibility of drug demand reduction and endeavours to aware the youth on harmful effects of drug abuse. Some examples include Hon'ble Prime Minister's Message to the nation on International Anti-Drug Day on 26th June, Hon'ble Home Minister's Message to the nation on International Anti-Drug Day on 26th June, and DG, NCB Message.

Not the end but just the beginning

The National Policy on NDPS is based on the Directive Principles, contained in Article 47 of the Constitution of India, which direct the State to endeavour to bring about prohibition of the consumption, except for medicinal purposes, of intoxicating drugs injurious to health.

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Neuromodulation in Substance Use Disorders

Gulesh Kumar[1], Nishant Goyal[2]

Introduction

Substance use disorders (SUDs) involve the persistent and harmful use of psychoactive substances despite significant negative impacts on an individual's clinical and social functioning, as well as frequent relapses. These disorders are responsible for approximately 500,000 deaths each year in the United States and often co-occur with psychiatric conditions like schizophrenia and mood disorders (American Psychiatric Association, 2013). On both global and national scales, substance use is a major public health issue, with both legal and illegal substances contributing significantly to morbidity, mortality, disability, and disease burden (Ali et al., 2011). In India, a national survey revealed that alcohol is the most commonly used substance, followed by cannabis and opioids, with prevalence rates of 4.6%, 2.8%, and 2.1%, respectively. Additionally, 19% of alcohol users and 0.25% of cannabis users consume these substances in a dependent manner (Ambekar et al., 2019).

Despite advances in research aimed at improving therapeutic approaches, treatment outcomes for SUDs remain inconsistent and complex. While pharmacological, behavioral, and psychosocial treatments are available, their effectiveness and tolerability vary. Current treatment models often rely heavily on symptomatic drugs or substitution therapy, which show limited long-term efficacy as evidenced by high relapse rates. Most treatments address only short-term withdrawal and fail to offer long-term solutions. Given the heterogeneous nature of SUD, it is improbable that a single medication will be effective for all individuals. Therefore, there is a need for new, more effective, and diverse treatment options to enhance care and increase utilization. Developing neuroscience-informed therapeutics for SUDs is crucial. Neuromodulation (NM) presents promising brain-based approaches, such as repetitive transcranial magnetic stimulation (rTMS), transcranial direct current stimulation (tDCS), and deep brain stimulation (DBS), which modulate SUD-related mesolimbic cortical circuitry (Mehta et al., 2024).

Rationale of Neuromodulation in Substance Use Disorders: Neurobiology

The reinforcing effects of substances are primarily mediated by the mesocorticolimbic system, which includes dopamine (DA)

projections from the midbrain to the prefrontal cortex (PFC) and ventral striatum, specifically the nucleus accumbens (NAc). Substance misuse is associated with a hypo-dopaminergic state in the mesolimbic system and dysfunction in the dorsolateral prefrontal cortex (DLPFC) and dorsal anterior cingulate cortex (dACC), which are crucial for decision-making and self-control. Additionally, the ventral PFC, encompassing the orbitofrontal cortex (OFC) and ventral anterior cingulate cortex (vACC), plays a role in emotional processing and limbic arousal, thus dysfunction in these areas is linked to SUDs. The left DLPFC mediates reward-based motivation, while the right DLPFC is involved in withdrawal behaviours and inhibition. Therefore, Neuromodulation (NM) targeting the right DLPFC may enhance executive functions by inhibiting the left DLPFC to correct hemispheric imbalance, potentially reducing substance consumption and craving (Uhl et al., 2019).

Outcomes of substance use treatment with NM vary based on the targeted brain region and whether stimulation is bilateral or unilateral. Most studies using repetitive transcranial magnetic stimulation (rTMS) for SUDs have focused on the DLPFC. rTMS targeting the left DLPFC has shown positive effects and significant clinical impact in treating tobacco, stimulant, and opioid use disorders, while stimulation of the right or bilateral DLPFC has been less effective (Salling & Martinez, 2016). Conversely, in alcohol use disorder (AUD), left DLPFC rTMS was ineffective, whereas right and bilateral DLPFC stimulation showed effectiveness with multiple sessions. Other regions, such as the medial PFC (mPFC) and frontal pole, have emerged as novel therapeutic targets, particularly with deep TMS protocols using H-coil technology, showing promise in alcohol and cocaine treatment. Bilateral PFC and insular cortex targeting with deep TMS may also be effective for alcohol and tobacco use treatment. Despite the emerging focus on DLPFC and mPFC as rTMS targets, the mechanisms by which rTMS exerts therapeutic effects in SUDs remain unclear, as few studies have incorporated neuroimaging to understand these alterations in SUD-related brain circuitry (Webber & Schmitz, 2022).

Repetitive transcranial magnetic stimulation (rTMS)

Transcranial magnetic stimulation (TMS) is an FDA-cleared, non-invasive technique with applications in treating neurological and psychiatric disorders. Emerging research suggests that TMS may also be beneficial for substance use disorders (SUDs), as various experiments and randomized controlled trials have shown its potential to reduce cravings and improve clinical outcomes (Philip et al., 2019). The rationale for using repetitive TMS (rTMS) in SUDs and other behavioural addictions originates from preclinical studies. Notably, a 2015 study demonstrated that optogenetic stimulation of the prefrontal cortex (PFC) in rats could reverse cocaine-induced prefrontal hypofunction and prevent compulsive cocaine-seeking behaviors (Jasinska et al., 2015).

Addiction is characterized by increased impulsivity and impaired risky decision-making, processes that rTMS on the dorsolateral prefrontal cortex (DLPFC) can modulate by enhancing inhibitory control, potentially reducing substance use. High-frequency pulses stimulating the DLPFC should boost its activity and inhibitory control functions. Strafella and colleagues discovered that high-frequency rTMS on the prefrontal cortex induces subcortical dopamine release in the caudate nucleus, while Cho and Strafella found that rTMS over the left DLPFC modulates dopamine release in the anterior cingulate cortex and orbitofrontal cortex within the same hemisphere. Moreover, rTMS may influence the expression of neurotropic factors such as BDNF, which regulate synaptic plasticity in cortical and subcortical areas (Strafella et al., 2001). Recent suggestions indicate that non-synaptic events, including plasticity-related gene expression and neurogenesis, could mediate the long-term effects of rTMS. The frontal cortex, a trans-diagnostically relevant TMS target, activates local neurons and trans-synaptically activates distal brain regions. Previous TMS studies showed that stimulating or inhibiting the frontal area could modulate cortico-subcortical circuits (e.g., fronto-amygdala) involved in drug cue reactivity, ultimately decreasing drug-related behaviours like craving and consumption. For instance, inhibitory rTMS over the left frontal cortex can potentially reverse hyperactivity in brain regions associated with SUDs, such as the striatum, insula, and amygdala (Soleimani et al., 2023).

A review of 334 studies indicated that rTMS could be classified as probably effective for treating addiction, showing promising effects for high-frequency rTMS protocols targeting the DLPFC in SUDs, with noteworthy pilot data for gambling disorder (Gay et al., 2022). However, large-scale trials are necessary to determine optimal parameters (e.g., duration, number of sessions, stimulation frequency and intensity, target brain regions) for the most effective and safe rTMS treatment of addiction. Future research should focus on personalizing rTMS treatments and optimizing stimulation protocols (Martinotti et al., 2021).

Deep transcranial magnetic stimulation (dTMS) using the H-coil system is a relatively new non-invasive brain stimulation technique. The unique structure of the H-coils allows for repetitive stimulation of the entire cortex, unlike other systems such as the figure-of-eight coil used in repetitive transcranial magnetic stimulation (rTMS), which offer more focal stimulation. The broad stimulation provided by H-coils can enhance the electrical field in deeper subcortical brain regions, making DTMS with H-coils a promising treatment option for various substance use disorders (SUDs). The effectiveness of the Deep TMS System with the H4-coil for short-term smoking cessation was demonstrated in a prospective, double-blind, randomized, sham-controlled, multi-centre trial involving 262 eligible subjects. Participants were randomized into an active treatment group, which received BrainsWay's H4 Deep TMS

coil targeting addiction-related brain circuits, and a sham control group. In the intention-to-treat (ITT) population of 262 participants, which included those who did not complete the treatment period, the continuous quit rate (CQR) was 17.1% in the active Deep TMS group compared to 7.9% in the sham group (p=0.0238) (Zangen et al., 2021). In 2020, the Food and Drug Administration (FDA) approved the use of TMS with this BrainsWay technology for smoking cessation.

One review summarized preliminary evidence suggesting that high-frequency dTMS may be a promising treatment for individuals with SUDs who have not responded to other available treatments. Data from nine studies indicated that daily dTMS treatment reduced cravings, dependence, and consumption of alcohol, nicotine, and cocaine, with some effects lasting up to 12 months without maintenance treatment. However, this evidence should be interpreted cautiously, as it is based on studies with open-label designs or randomized controlled trials (RCTs) with small sample sizes (Kedzior et al., 2018).

Concerns about the safety of TMS in treating SUDs mainly revolve around the risk of inducing seizures. Currently, no evidence suggests an increased risk of serious or non-serious adverse events related to TMS in treating addictive disorders. Both acute and chronic substance use can modulate motor system excitability, reflected in changes in TMS outcome measures, which can lead to variations in TMS results for SUDs. Medical and pharmacological factors that independently increase the risk of seizures (e.g., stimulant use, alcohol use/withdrawal, benzodiazepine/barbiturate use/withdrawal, opioid use, tramadol use, bupropion in nicotine treatment, other psychopharmacological treatments for comorbid psychiatric disorders) could theoretically enhance brain sensitivity to TMS-induced seizures and should be considered (Rossi et al., 2009).

Transcranial direct current stimulation (tDCS)

Transcranial direct current stimulation (tDCS) delivers a low-intensity current (0.5–2.0 milliamps) to a targeted brain region for several minutes using two or more electrodes (anodal and cathodal). This technique allows for polarity-dependent modulation of neuronal resting membrane potential and cortical excitability, where cathodal current decreases and anodal current increases cortical excitability (Nitsche & Paulus, 2000).

Several randomized, sham-controlled clinical trials have shown that multiple sessions of tDCS significantly reduced craving and relapse rates in alcohol use disorder with long-lasting effects. Additionally, tDCS reduced craving in opioid use disorder and potentially in cocaine use disorder when the anode was placed over the right dorsolateral prefrontal cortex (DLPFC) and the cathode over the left DLPFC. It also reduced craving and smoke consumption in tobacco use and possibly methamphetamine use disorder when the anode was placed over the left DLPFC and the cathode over the right DLPFC

(Nakamura-Palacios et al., 2021). Notably, in a study by Da Silva et al., while craving was significantly reduced in the active group, there was a significant increase in relapse rates with active tDCS.

A study by Boggio et al. investigated the use of tDCS for cannabis use disorder. Twenty-five chronic cannabis users received 10Hz stimulation to either the left or right DLPFC. The results indicated that stimulation of the right DLPFC, but not the left, was associated with a decline in cannabis-related craving (Boggio et al., 2010). Another study by Wang et al. demonstrated that even a single session of tDCS over the bilateral frontal-parietal-temporal (FPT) area significantly reduced subjective craving scores induced by heroin cues in heroin-addicted subjects (Wang et al., 2016).

Coles et al. found that tDCS reduced craving and consumption for alcohol and drugs, though the results for tobacco were unclear due to variations in stimulation methods and parameters. While some studies indicated that a single stimulation of the left DLPFC with anodal tDCS significantly reduced cravings, other findings did not support this conclusion, possibly due to differences in study designs, stimulation parameters, and participant characteristics (Coles et al., 2018; Falcone et al., 2016). Salling and Martinez (2016) reviewed research on brain stimulation in addiction and found that tDCS has an acute effect on drug and alcohol cravings, though the results are inconsistent (Salling & Martinez, 2016).

A meta-analysis reviewing the effect of tDCS on substance craving and the influence of potential moderators revealed a significant medium effect size favoring real tDCS over sham stimulation in reducing craving. Moreover, the number of sessions significantly influenced the effect, favouring multi-session over single-session treatment (Chen et al., 2020). Studies evaluating objective measures of cue reactivity have shown inconsistent results, including measures of heart rate variability, event-related potentials, visual attention bias, and emotional startle response.

Recent reviews and meta-analyses have concluded that tDCS interventions are generally associated with greater reductions in self-reported craving and cue-induced craving compared to sham treatments. However, variability in effect sizes across trials and some studies not identifying significant differences between verum tDCS and sham, or between differing numbers of tDCS sessions, indicate a need for further research. Current literature suggests that tDCS, particularly over DLPFC and FPT areas, may have therapeutic effects in addictions, though existing studies have heterogeneous methodologies and protocols. Future studies with larger sample sizes and longer follow-up are needed to definitively determine the efficacy of tDCS for addictions (Stein et al., 2019).

Deep Brain Stimulation (DBS)

In a study, the implementation of active DBS led to a significant decrease in both

craving and cigarette consumption in a solitary individual initially treated with DBS for refractory OCD. Additionally, three separate studies explored the impact of active DBS on opioid consumption or cravings in individuals dependent on heroin, with a focus on the nucleus accumbens. All three studies revealed a notable decrease in consumption and/or cravings, coupled with an increase in participants abstaining from opioid use. Furthermore, research by Voges and colleagues (2013) investigated DBS surgery for alcohol addiction, demonstrating a decline in alcohol consumption or craving levels. Similarly, other studies examining DBS effects on alcohol use disorder, employing active stimulation of the nucleus accumbens, also noted a decrease in alcohol consumption or craving levels. (Voges et al., 2013; Kuhn et al., 2011).

Electroconvulsive Therapy (ECT)

A single study has explored the effects of ECT on methamphetamine use disorders in a sole participant, yielding positive outcomes in withdrawal-induced delirium and craving scores (Ahmadi et al., 2015). Additionally, another study concluded ECT as an effective treatment for patients with treatment-resistant depression and comorbid substance use disorders (Dannon, 2023). Furthermore, a review suggested that a history of alcohol use disorder (AUD) might serve as a positive predictor for ECT response in patients experiencing a major depressive episode, attributing neurobiological hypotheses of excitatory/inhibitory neurotransmitter changes with ECT (Aksay et al., 2017).

Conclusion

In summary, various neuromodulation techniques, including transcranial magnetic stimulation (TMS), transcranial direct current stimulation (tDCS), deep brain stimulation (DBS), and electroconvulsive therapy (ECT), hold promise in the treatment of substance use disorders (SUDs) and related psychiatric conditions. TMS and tDCS offer non-invasive approaches that modulate cortical excitability, showing efficacy in reducing cravings and consumption across multiple substances. DBS, particularly targeting the nucleus accumbens, demonstrates significant decreases in craving and consumption for substances like opioids and alcohol. ECT has shown positive outcomes in treating methamphetamine use disorders and comorbid substance use disorders alongside treatment-resistant depression. While these interventions show potential, further research is needed to elucidate their long-term efficacy and safety, paving the way for more effective and personalized treatments for SUDs.

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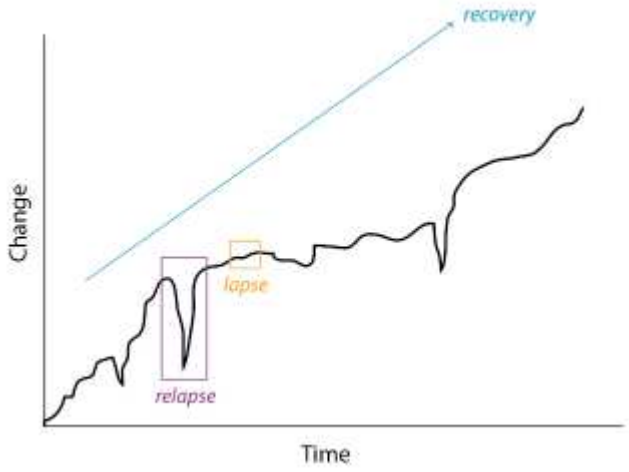
From Lapse to Relapse: Through the lens of Marlatt's Cognitive- Behavioral Model

Ms. Jayashree Das

Recovering from addiction takes time and lapses and relapses can sometimes happen. A lapse refers to a short return to alcohol or other drug use, or gambling. It is a one-time (or temporary) step back on a recovery journey. However, a relapse refers to a return of alcohol or other drug use, or gambling, which someone has previously managed to control or quit completely. In a relapse the use of alcohol or other drugs or gambling goes back to previous levels of use, or close to this.



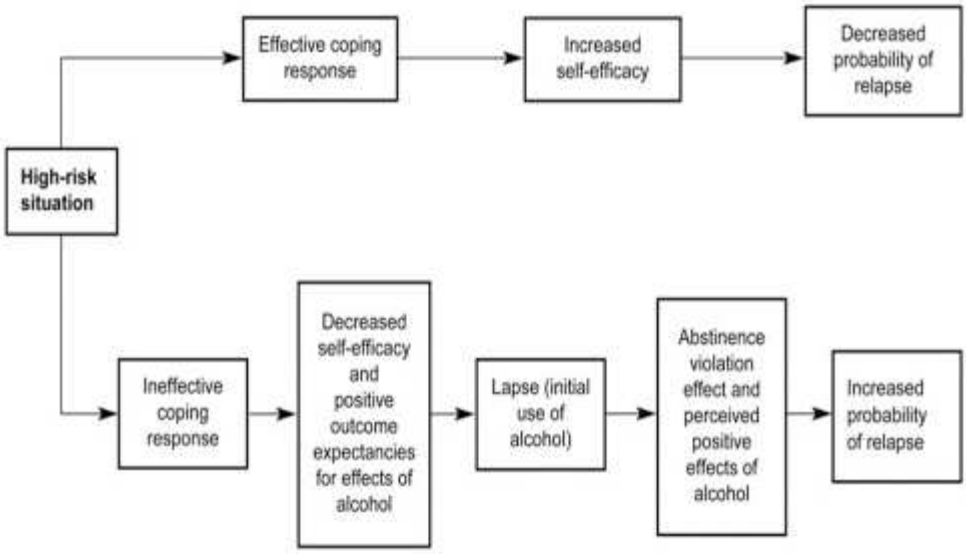
Relapse, or the return to heavy alcohol use following a period of abstinence or moderate use, occurs in many drinkers who have undergone alcoholism treatment. Some models of relapse are based on social-cognitive or behavioural theories that emphasize relapse as a transitional process, a series of events that unfold over time. One such influential relapse prevention model was developed by Marlatt and Gordon (1985).

Overview of the Relapse Prevention (RP) Model:

Marlatt and Gordon's RP model incorporates both a conceptual model of relapse and a set of cognitive and behavioural strategies to prevent or limit relapse episodes. According to this model, certain factors or situations can precipitate or contribute to relapse episodes, and, those factors fall into two categories, namely, immediate determinants and covert antecedents.

Immediate Determinants of Relapse:

High-risk situations frequently serve as the immediate precipitators of initial alcohol use after abstinence.



The above figure depicts the cognitive - behavioural model of the relapse process that posits the role of high-risk situations and for the drinker's response to those situations. People with effective coping responses will have increased self-efficacy and have confidence that they can cope with the situation, thereby reducing the probability of a relapse. Conversely, people with ineffective coping responses will experience decreased self-efficacy, which, together with the expectation that alcohol use will have a positive effect (i.e. positive outcome expectancies), can result in an initial lapse. This lapse, in turn, can result in feelings of guilt and failure (i.e. an abstinence violation effect). The abstinence violation effect, along with positive outcome expectancies, can increase the probability of a relapse. This model also applies to users of drugs other than alcohol.

Some of the intrapersonal high-risk situations (e.g., feeling bored or lonely after coming home from work to an empty house) or by reactions to environmental events (e.g., feeling angry about an impending layoff at work) can result in negative emotional states like anger, anxiety, frustration, depression, and boredom are also associated with the highest rate of relapse. Interpersonal conflict (like an argument with a family member) can also result in negative emotions and can precipitate relapse. Social pressure and positive emotional states (e.g., celebrations) also were identified as high-risk situations that could precipitate relapse.

A person's coping behaviour in a high-risk situation is critical determinant of the likely outcome. Thus, a person who can execute effective coping strategies (e.g., a behavioural strategy, such as leaving the situation, or a cognitive strategy, such as positive self-talk) is less likely to relapse. Conversely, people with low self-efficacy perceive themselves as lacking the motivation or ability to resist drinking in high-risk situations.

The Abstinence Violation Effect

The abstinence violation effect is a type of reaction by the drinker to a lapse which may influence whether a lapse leads to a relapse. This reaction focuses on the drinker's emotional response to an initial lapse and on the causes to which he or she attributes the lapse. People who attribute the lapse to their own personal failure are likely to experience guilt and negative emotions that can, in turn, lead to increased drinking as a further attempt to avoid or escape the feelings of guilt or failure. Furthermore, people who attribute the lapse to stable, global, internal factors beyond their control (e.g., "I have no willpower and will never be able to stop drinking") are more likely to abandon the abstinence attempt (and experience a full-blown relapse) than are people who attribute the lapse to their inability to cope effectively with a specific high-risk situation. In contrast to the former group of people, the latter group realizes that one needs to "learn from one's mistakes" and, thus, they may develop more effective ways to cope with similar trigger situations in the future.

Covert Antecedents

The covert antecedents include lifestyle factors, such as overall stress level, as well as cognitive factors that may serve to "set up" a relapse, such as rationalization, denial, and a desire for immediate gratification (i.e., urges and cravings). In relapse "set ups," it may be possible to identify a series of covert decisions or choices, each of them seemingly inconsequential, which in combination set the person up for situations with overwhelmingly high risk. These choices have been termed "apparently irrelevant decisions" (AIDs), because they may not be overtly recognized as related to relapse but nevertheless help move the person closer to the brink of relapse. One example of such an AID is the decision by an abstinent drinker to purchase a bottle of liquor "just in case guests stop by."

Intervention Strategies related to RP

The RP model includes a variety of cognitive and behavioural approaches that includes specific intervention strategies that focus on the immediate determinants of relapse as well as global self-management strategies that focus on the covert antecedents of relapse.

Both the specific and global strategies fall into three main categories: skills training, cognitive restructuring, and lifestyle balancing.

Specific Intervention strategies focus on enhancing the client's awareness of cognitive, emotional, and behavioural reactions to prevent a lapse from escalating into a relapse.

The first step in this process is to teach clients the RP model and to give them a "big picture" view of the relapse process, where they will learn to anticipate and plan for high-risk situations during recovery and in that process make a good road map for recovery. Once the person's high-risk situations have been identified, two types of intervention strategies can be applied to lessen the risks posed by those situations. The first strategy

involves teaching the client to recognize the warning signals or cues indicating that the client is about to enter a high-risk situation. Once the client identifies the warning signals, he/she may be able to take some evasive action, like escaping from the situation or avoiding the high-risk situation entirely. The second strategy involves evaluating the client's existing motivation and his ability to cope with high-risk situations and help the client learn more effective coping skills that can be behavioural or cognitive in nature.

Efficacy-enhancement strategies are also designed to increase a client's sense of mastery and of being able to handle difficult situations without lapsing. Another efficacy-enhancing strategy can be breaking down the behaviour change into smaller, more manageable subtasks that can be addressed one at a time. Moreover, counteracting the drinker's misperceptions about alcohol's effects is an important part of relapse prevention.

Sometimes, lapse-management strategies like simple written instructions to refer to in the event of a lapse can also be used. These includes contracting with the client to limit the extent of use, to contact the therapist as soon as possible after the lapse, and to evaluate the situation for clues to the factors that triggered the lapse.

Cognitive restructuring is a critical component of interventions to lessen the abstinence violation effect. Thus, clients are taught to reframe their perception of lapses—to view them not as failures or indicators of a lack of willpower but as mistakes or errors in learning that signal the need for increased planning to cope more effectively in similar situations in the future.

Global self-management strategies

Assessing lifestyle factors associated with increased stress and decreased lifestyle balance is an important first step in teaching global self-management strategies. This assessment can be accomplished through approaches in which clients self-monitor their daily activities, identifying each activity as a "want," "should," or combination of both. Moreover, specific cognitive-behavioural skills training approaches, such as relaxation training, stress-management, and time management, can be used to help clients achieve greater lifestyle balance. Moreover, stimulus-control techniques are effective strategies that can be used to decrease urges and cravings in response to such stimuli, particularly during the early abstinence period. These techniques encourage the client to remove all items directly associated with alcohol use from his or her home, office, and car.

Even with effective stimulus-control procedures in place and an improved lifestyle balance, some clients still experience cravings or urges to drink. This is when we use urge –management techniques. According to this approach, the client should not identify with the urge or view it as an indication of his or her "desire" to drink. Instead, the client is taught to label the urge as an emotional or physiological response to an external stimulus

in his or her environment that was previously associated with heavy drinking. In one clinical intervention based on this approach, the client is taught to visualize the urge or craving as a wave, watching it rise and fall as an observer and not to be "wiped out" by it. This imagery technique is known as "urge surfing" and refers to conceptualizing the urge or craving as a wave that crests and then washes onto a beach. In so doing, the client learns that rather than building interminably until they become overwhelming, urges and cravings peak and subside rather quickly if they are not acted on. The client is taught not to struggle against the wave or give in to it, thereby being "swept away" or "drowned" by the sensation, but to imagine "riding the wave" on a surf board.

Finally, therapists can assist clients with developing relapse road maps—that is, cognitive-behavioural analyses of high-risk situations that emphasize the different choices available to clients for avoiding or coping with these situations as well as their consequences.

To conclude, the RP model of relapse is centered around a detailed taxonomy of emotions, events, and situations that can precipitate both lapses and relapses to drinking. Research findings support both the overall model of the relapse process and the effectiveness of treatment strategies based on the model and thereby reducing the risk of relapse and yielding a road of recovery.

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Addiction's evolutionary perspective

Lt. Col. (Dr.) Rachit Sharma

Understanding addiction through the lens of human evolution provides valuable insights into why certain behaviors and vulnerabilities exist. This perspective helps explain how evolutionary adaptations that once served essential survival functions can become maladaptive in modern environments. Here's a detailed exploration:

1. **REWARD SYSTEM AND SURVIVAL:-**

   (a) **ADAPTIVE BEHAVIORS:**

   The brain's reward system evolved to reinforce behaviors that were critical for survival, such as eating, mating, and social bonding. These activities trigger the release of dopamine, a neurotransmitter associated with pleasure and reward, encouraging repetition of these behaviors.

   (b) **MODERN HIJACKING:**

   Addictive substances and behaviors (e.g. drugs, alcohol, gambling) exploit this reward system by causing excessive dopamine release. This can override natural controls and lead to compulsive behaviors, even in the face of negative consequences.

2. **NATURAL SELECTION AND RISK-TAKING:-**

   (a) **EXPLORATION AND ADAPTATION:**

   Traits like novelty-seeking and risk-taking were advantageous for early humans, promoting exploration, innovation, and adaptability to new environments. These traits are linked to dopamine pathways in the brain.

   (b) **VULNERABILITY TO ADDICTION:**

   In contemporary settings, these same traits can increase the likelihood of experimenting with and becoming addicted to substances, as individuals seek new and stimulating experiences.

3. **SOCIAL AND ENVIRINMENTAL INFLUENCES:-**

   (a) **SOCIAL BONDS :**

   Humans evolved as social beings, relying on group cohesion for survival. Social interactions and relationships are crucial for mental health and well-being.

   (b) **ISOLATION AND STRESS:**

   Modern stressors, social isolation, and disrupted social bonds can drive individuals to seek relief through substances or addictive behaviors, as these provide temporary pleasure of escape.

4. **GENETIC PREDISPOSITIONS:-**

(a) **INHERITED SUSCEPTIBILITIES:** Genetic variations influence how individuals respond to substances, their tendency toward risk-taking, and their ability to cope with stress. For example, variations in genes related to dopamine signaling can affect addiction risk.

(b) **EVOLUTIONARY TRADE-OFFS:** Some genetic traits that increase susceptibility to addiction might have had advantages in ancestral environments, such as increased energy or resilience during challenging times.

5. **MISMATCH HYPOTHESIS:-**

(a) **EVOLUTIONARY MISMATCH:** Modern environments differ drastically from those in which humans evolved. The availability of highly potent and accessible addictive substances and activities creates a mismatch with our evolutionary adaptations.

(b) **OVERSTIMULATION:**

Our reward system, designed for periodic and moderate stimulation, is overwhelmed by the constant and intense stimulation provided by modern addictive substances and behaviors.

6. **CULTURAL EVOLUTION:-**

(a) **CHANGING NORMS AND VALUES:** Cultural evolution affects how societies view and interact with addictive substances. Cultural attitudes and norms can influence the prevalence and patterns of substance use.

(b) **TECHNOLOGICAL ADVANCES:** Modern technology has introduced new forms of addiction, such as internet and gaming addiction, which further challenge our evolutionary adaptations.

7. **EPIGENETICS AND ENVIRONMENTAL INTERACTION:-**

(a) **GENE-ENVIRONMENT INTERACTION:**

Epigenetic changes, where environmental factors affect gene expression, play a role in addiction. Early-life stress, trauma, and environmental exposures can modify the expression of genes involved in stress response and reward processing.

(b) **TRANSGENERATIONAL EFFECTS:** These epigenetic changes can be passed down to future generations, influencing their susceptibility to addiction.

In summary, understanding addiction through the lens of evolution highlights the complex interplay between our biological predispositions, genetic makeup, and the modern environment. This perspective can inform more affection prevention and treatment strategies by addressing both the biological and environmental factors that contribute to addiction.

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Viewpoint/ Perspective

Substance use and evolution- an intertwined journey

Dr. Niska Sinha[1] & Dr Tathagat Mahintamani[2]

Substance use disorders are prevalent across the world throughout the ages. There are ample historical evidences of recreational, ritualistic as well as medicinal substance use. The Peruvian mummies show traces of cocaine originating from coca leaves consumed by native Americans (Wadley, 2016). The ancient Sumerians were using opium since about 5000 BCE. Egyptians used alcohol in 3500 BCE, while ancient Chinese used cannabis since around 3000 BCE. The biological proofs are supported by numerous artifacts, literature, and artworks of ancient civilization, showing direct references of various psychoactive substances (openlib, 2016).

Interestingly since ancient era, and more so in the twentieth century, there have been numerous attempts to make the society 'drug free' or 'alcohol free', which yielded little success. On the other hand, the efforts of coercive legal and judicial control of substance use led to incarceration, broken family, and a range of human rights violation (Mackey- Kallis and Han, 1994). This compelled us to search an alternative way to manage the problems of substance use, which generated the concept of harm reduction. With time there is a gathering of international support in the favour of harm reduction approach. The UN general assembly on 15th Dec 2022 have dropped the 'society free of drug abuse' phrase for the first time in three decades.

Now the question is why it is so hard to 'wipe out the menace of' addiction from the society? And another similarly important question is why people are taking so much risk to continue an apparently useless, and disabling behaviour for millennia? We can look backwards in the course of evolution to find the answer

Co-evolution of plant-based allelochemicals, and their psychoactive effect on humans: Psychotropic plants contain allelochemicals to deter herbivore insect and animal invasion. For example, nicotine in tobacco leaves is lethal for a group of insects feeding on tobacco plants. These allelochemicals provide survival fitness to the plants, but their production, and exhaustive production cause significant energy expenditure, and this in turn reduces the plant fertility. As a result, the plant tends to accumulate the allelochemicals in a more useful parts like young leaves and reproductive parts. Simultaneously the animals started evolving in a way to either selectively avoiding the parts with highest allelochemical concentration or

producing the detoxifying enzymes. Therefore, the CYP enzyme system flourished extensively in vertebrates and particularly in mammals (Sullivan & Hagen, 2002).

Use of psychoactive substances in the animal kingdom: The plant-based psychoactive substance consumption is not uncommon in the animal kingdom. Elephants use psilocybin, and overripe fruits containing alcohol, bees ingest nectar of datura and poppy plants, horses ingest locoweed etc. The pattern of use of the substance is like that of human using substance for recreational purpose (Calvey, 2017). This inherently defies the previously discussed deterrent purpose of allelochemicals.

Why there is a mismatch between the intended purpose and the actual use of plant-based allelochemicals? One explanation can be, the reinforcing effect of substances were serendipitous in the higher vertebrates and mammals. Another and probably more plausible explanation can be the chemical structure of the allelochemicals. Many of these are rich in essential amino acids like tryptophan and tyrosine, which are important components of stress hormones and dopamine. Apparently, the initial purpose of plant-based substance use was to enhance energy, and to mitigate fatigue and pain. As a result, historically and evolutionarily animals and humans used them more like food, rather than for recreational purposes. The traces of psychoactive substances enhanced their fitness, rather than producing a superfluous euphoria. This is still evident in some Australian aboriginals, who use Piuri leaves during long marches to defeat fatigue and hunger (Sullivan and Hagen, 2002).

Emotion and addiction: Vertebrates, and more so the mammals and humans started appraising the neurochemical signals as emotion. Positive emotions (euphoria, excitation etc.) motivate whereas negative ones (fear, anxiety etc.) deter one to engage in a particular behaviour. Negative emotions protect from potential danger. For example, ancient human used to remain anxious about predators while searching for food. Positive emotion are associated with anticipation and excitation towards a promise of an increase in fitness, like the prospect of a good foraging session, feeling of relief and security after killing a predator etc.

Addiction as an evolutionary cost of behavioural flexibility: The major distinguishing feature of primates and humans from the other animals, is their behavioural flexibility. It is based upon exploiting the existing knowledge and on exploration for further knowledge. Dopaminergic fibres and especially the reward circuit are closely associated with this behaviour. Interestingly, the same circuits are associated with addiction also. As a result, some researchers speculate that addiction is an extended evolutionary synthesis of behavioural flexibility and innovative behaviour (Calvey, 2017).

Lets sum it up…. During evolution to the Anthropocene era, the socioeconomic and scientific progress have practically eliminated interspecific struggle for human, whereas intraspecific struggle and struggle against nature predominates. So, many of the previous emotions lost their protective significance, and/or people started feeling them pathologically. A related issue is the reward deficiency, i.e. a

hypodopaminergic state in the reward circuit, that is perceived as lack of reward and predominance of negative emotion (Blum et al, 2000). These conditions, along with other evolutionary extended phenotypes increase the vulnerability to addiction. As a result, the vulnerable subject search for the substances which have been a close companion to tweak the reward circuit since millennia.

Conclusion: Substance use in a section of the society seems inevitable from an evolutionary point of view, and history testifies it. Still, substance use related problem seems to be a recent outbreak. As we tried to check substance use with an iron fist of law and judiciary, we have unleashed a demon of pureer and more potent substances. Probably an overdose with coca leaves could hardly be dreamt of in the Inca civilization, but cocaine overdose is a harsh reality today- courtesy our modern technology and an continuous attempt to produce more potent and pure drug to satisfy more demand with less quantity of substance. Once people are dependent on more potent substance, there is no looking back. This certainly puts us to the brink of a huge crisis. Probably a non-stigmatizing, rational and person-centred approach towards substance use disorder will be able to save us.

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Vikshit Bharat, Nasha Mukt Bharat : Vision to 2047

Dr Udayan Majumder, MD, FAPSI, FIPS

A. Introduction :

The government believes in addressing the problem of addiction in its totality. This includes prevention efforts, creating awareness, early identification, treatment and rehabilitation, sustained follow-up care, and also involving and mobilizing the community.

B. National Scenario on Addiction:

The national Survey by NDDTC AIIMS, New Delhi on extent and pattern of Substance Use in India 2019, establishes that a substantial number of people use psychoactive substances in India, and that substance use exists in all the population groups. However, adult men bear the brunt of substance use disorders. This survey also indicates that there are wide variations in the extent and prevalence of use across different states and between various substances.

Alcohol is the most common psychoactive substance used by Indians (among the substances included in this survey).Nationally, about 14.6% of the population (between 10 and 75 year of age) uses alcohol. In terms of absolute numbers, there are about 16 crore persons who consume alcohol in the country. Use of alcohol is considerably higher among men (27.3%) as compared to women (1.6%). For every one woman who consumes alcohol, there are 17 alcohol using men. Among alcohol users, country liquor or 'desisharab' (about 30%) and spirits or Indian Made Foreign Liquor (about 30%) are the predominantly consumed beverages. States with the highest prevalence of alcohol use are Chhattisgarh, Tripura, Punjab, Arunachal Pradesh and Goa.

After Alcohol, Cannabis and Opioids are the next commonly used substances in India. About 2.8% of the population (3.1 crore individuals) reports having used any cannabis product within the previous year. The use of cannabis was further differentiated between the legal form of cannabis (bhang) and other illegal cannabis products (ganja and charas). Use of these cannabis products was observed to be about 2% (approximately 2.2 crore persons) for bhang and about 1.2% (approximately 1.3 crore persons) for illegal cannabis products. States with the highest prevalence of cannabis use are Uttar Pradesh, Punjab, Sikkim, Chhattisgarh and Delhi.

About 2.1% of the country's population (2.26 crore individuals) uses opioids which include opium (or its variants like poppy husk

known as doda/phukki), heroin (or its impure form – smack or brown sugar) and a variety of pharmaceutical opioids. Nationally, the most common opioid used is heroin (1.14%) followed by pharmaceutical opioids (0.96%) and opium (0.52%). Sikkim, Arunachal Pradesh, Nagaland, Manipur and Mizoram have the highest prevalence of opioid use in the general population (more than 10%).

The survey indicates that a sizeable number of individuals use sedatives and inhalants. About 1.08% of 10-75 year old Indians (approximately 1.18 crore people) are current users of sedatives (nonmedical, non-prescription use). States with the highest prevalence of current sedative use are Sikkim, Nagaland, Manipur and Mizoram.

However, Uttar Pradesh, Maharashtra, Punjab, Andhra Pradesh and Gujarat are the top five states which house the largest populations of people using sedatives. Inhalants (overall prevalence 0.7%) are the only category of substances for which the prevalence of current use among children and adolescents is higher (1.17%) than adults (0.58%). Other categories of drugs such as Cocaine (0.10%), Amphetamine Type Stimulants (0.18%) and Hallucinogens (0.12%) are used by a small proportion of country's population.

C. Addiction: A serious threat to the youth?

The **government aims to make India "drug-free" by 2047.**

1. India is facing a serious challenge of **drug abuse and trafficking,** which affects the health, well-being, and security of millions of people, especially the youth.
2. According to **World Drug Report 2022,** India has the **4 largest quantities of opium seized in 2020** at 5.2 tons, and the **3 highest amount of morphine was also seized in the same year at 0.7 tons.**
3. According to the **United Nations Office on Drugs and Crime (UNODC),** India accounted for **7% of the global opium seizures and 2% of the global heroin seizures** in 2019.
4. India is also situated between **two major drug-producing regions, the Golden Crescent (Iran-Afghanistan-Pakistan) and the Golden Triangle (Thailand-Laos-Myanmar),** which makes it vulnerable to illicit drug trafficking.

D. India's Efforts in Eliminating Opium and Cannabis Cultivation?

Opium and cannabis are two of the most commonly cultivated and consumed drugs in India. Opium is derived from the poppy plant and cannabis from the hemp plant. Both have psychoactive effects and can cause addiction and health problems.

The government has intensified its crackdown on drugs with various measures such as destroying illegal crops, seizing drugs, arresting traffickers and creating awareness.

Some of the achievements of the government in this regard are:

1. According to the **Narcotics Control Bureau (NCB),** opium and cannabis cultivation in area the size of over 89,000 football fields has been destroyed in the past three years.

2. The NCB said that in the past 3 years, 35,592 acres of poppy cultivation and 82,691 acres of cannabis cultivation have been destroyed across the country.
3. The States where the crops were destroyed are Arunachal Pradesh, Assam, Manipur, Jharkhand, Madhya Pradesh, Himachal Pradesh, Jammu and Kashmir, Gujarat, Maharashtra, Odisha, Tripura, and Telangana.
4. The NCB also said that it has seized over 6.7 lakh kilograms of drugs worth over Rs. 3,000 crores in the past three years.
5. The seized drugs include heroin, opium, cannabis, cocaine, methamphetamine, MDMA (ecstasy), ketamine, etc.

E. Supply reduction: How is the Government Tackling the Drug Problem?

Legislative Measures: The government has enacted various laws such as the Drugs and Cosmetics Act, 1940; the **Narcotic Drugs and Psychotropic Substances (NDPS) Act, 1985;** and the Prevention of Illicit Traffic in Narcotic Drugs and Psychotropic Substances Act (PITNDPS), 1988.

To regulate and prohibit the manufacture, distribution, possession, and consumption of drugs.

1. The NDPS Act provides for stringent penalties for drug offenses.
2. Institutional Measures: The government has created institutions such as the NCB, the Directorate of Revenue Intelligence (DRI), the Customs Department, etc.
3. These institutions enforce drug laws and coordinate with other agencies at national and international levels.
4. The NCB is also part of various bilateral and multilateral initiatives such as the SAARC Drug Offences Monitoring Desk (SDOMD).

F. Demand reduction: Preventive Measures:

1. The government has launched various schemes and programmes such as **National Action Plan for Drug Demand Reduction (NAPDDR), Nasha Mukt Bharat Abhiyan (NMBA),** etc. to reduce demand & extend treatment facilities to patients with substance use disorders. These schemes prevent drug abuse and provide treatment and rehabilitation services to drug addicts.
2. The NAPDDR aims to reduce drug demand through awareness generation, capacity building, de-addiction and rehabilitation.
3. The **NMBA (Nasha Mukt Bharat Abhiyan)** aims to create awareness about harmful effects of drugs among school children.

4. NIDAAN and NCORD Portals:

It is a database that contains the photographs, fingerprints, court orders, information and details of all suspects and convicts arrested under the NPDS Act which can be accessed by State and Central law enforcement agencies.

5. National Narcotics Coordination portal (NCORD), drugs are highlighted and information up to the district levels is maintained.
6. **Drug Treatment Clinic (DTC),** a scheme of MoHFW, GOI and nationally coordinated by National Drug Dependence Treatment Centre (NDDTC), AIIMS, New Delhi are spread over whole country in phase wise

manner to provide free & cost effective OPD based treatment for drug treatment seekers.

7. **Addiction Treatment Facility (ATF)** a scheme of MoSJE, GOI and nationally coordinated by National Drug Dependence Treatment Centre (NDDTC), AIIMS, New Delhi, which encompasses both OPD & IPD basis in existing Govt De Addiction set ups to strengthen and empower. Nearly 41 nos of ATFs were inaugurated in Feb 2024 nationwide.
8. **NIMHANS Digital Academy and Virtual Knowledge Network (VKN ECHO)** is providing online courses on addiction for physicians, nurses, community health workers and various other health professionals on basic management on addiction, considering only handful number of psychiatrists and existing mental health professionals in India

G. What are the Challenges Associated with Drug Controlling in India?

1. Lack of Adequate Infrastructure:

There is a shortage of trained personnel, specialized equipment, and proper infrastructure to effectively combat drug trafficking and abuse.

2. Proliferation of New Psychoactive Substances:

The use of new psychoactive substances is on the rise in India, and these drugs are often not covered under existing drug control laws, making it difficult for law enforcement agencies to regulate them effectively.

3. Dark Net Easing Drug Trafficking:

As per NCB, the use of the 'dark net' and cryptocurrency in illegal drugs is increasing, and in 2020, 2021 and 2022, the agency investigated 59 such cases.

4. Poor Awareness and Education:

There is a lack of awareness and education about the dangers of drug abuse and addiction, especially in rural areas.

5. High Demand:

India has a large population, and there is a high demand for drugs, which fuels the drug trade.

6. Social Stigmatization:

Drug addiction is still highly stigmatized in Indian society, which makes it difficult for individuals to seek help and treatment.

H. Way forward:

1. Strengthening Law Enforcement:

Strengthening the implementation of the NDPS Act and PITNDPS Act by providing adequate resources, training and modern equipment to law enforcement agencies. Creating a more robust surveillance and intelligence gathering system to effectively curb drug.

2. Enhancing Preventive Measures:

Increasing the availability of affordable treatment and rehabilitation facilities for drug addicts and scaling up awareness campaigns to educate people about the dangers of drug abuse and the importance of seeking help.

3. Addressing Supply Reduction:

Increasing the focus on intercepting drug supply chains by improving border controls, using advanced technology and increasing international cooperation. Reducing drug production through alternative livelihood programs for farmers engaged in illicit cultivation. Jharkhand State has launched an alternate livelihood scheme for farmers growing poppy illegally and provides cash incentives to destroy the illegal crops.

4. Strengthening International Cooperation:

Strengthening cooperation with neighbouring countries, especially those in the Golden Crescent and the Golden Triangle, to effectively curb drug trafficking. Strengthening partnerships with international organizations such as the UNODC and Interpol to exchange information and best practices.

5. Use of Technology:

I. Big Data and analytics and AI to identify and track drug trafficking networks, monitor drug movements, and identify patterns related to drug abuse and trafficking.

II. Drones and satellites, to monitor and detect illegal drug cultivation and provide high resolution images of suspected areas.

III. Develop an online reporting system where citizens can report drug abuse and trafficking activities

I. Conclusion:

India is a country with almost over 65% population below the age of 35 years. Drug addiction in this productive age group is massively destroying the work efficiency, education, productivity of this group leading to have a great impact on future of India. Effective supply and demand reduction and proper implementation of govt schemes, generalised awareness about harmful effects of addiction, may form a way forward in our dream of **Vikshit Bharat & Nasha Mukt Bharat.**

Jai Hind

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The Interrelationship Between Sleep and Addiction in the Indian Context

Dr. Sourav Das

Abstract :

The intricate relationship between sleep disturbances and substance use disorders (SUDs) presents significant challenges in India, where addiction to substances such as alcohol, tobacco, opioids, and stimulants is prevalent. This review explores the bidirectional influence of sleep disturbances and addiction, focusing on the physiological, psychological, and sociocultural dimensions of this interplay. We examine the current state of research, highlight gaps in knowledge, and suggest integrated treatment approaches to improve outcomes for individuals with SUDs in the Indian context.

Introduction :

The co-occurrence of sleep disturbances and substance use disorders (SUDs) is well-documented, yet their interrelationship remains complex and multifaceted. In India, where the prevalence of SUDs is a growing public health concern, understanding this bidirectional relationship is essential for developing effective treatment and prevention strategies. This review aims to provide a comprehensive overview of how different substances affect sleep and how sleep disturbances, in turn, influence addiction.

Bidirectional Relationship :

The bidirectional relationship between sleep and addiction is evident; sleep disturbances can predispose individuals to substance use, and substance use can exacerbate sleep problems. According to the *Indian Journal of Psychiatry*, individuals with SUDs frequently report insomnia, fragmented sleep, and altered sleep architecture, which persist even during periods of abstinence (Suresh Kumar, 2017). Prospective studies, such as those reviewed in the *Journal of Clinical Sleep Medicine*, indicate that sleep disturbances in adolescents are predictive of subsequent substance use, highlighting the importance of early intervention (Roane & Taylor, 2008).

Substance-Specific Impacts on Sleep

Alcohol :

Alcohol is initially sedative but disrupts the second half of the sleep cycle by reducing REM sleep and causing early awakenings. Chronic alcohol use is associated with sleep apnea and poor sleep quality. Chokroverty (2010) in the *Indian Journal of Medical Research* noted that chronic alcohol users often suffer from sleep-disordered breathing and decreased sleep

efficiency (Chokroverty, 2010). Furthermore, a study by Brower (2015) in *Alcohol Research: Current Reviews* identified that alcohol-induced sleep disturbances are predictive of relapse in recovering alcoholics, emphasizing the need for targeted sleep interventions (Brower, 2015).

Alcohol also has a significant impact on obstructive sleep apnea (OSA). Alcohol consumption relaxes the muscles of the throat, increasing the likelihood of airway obstruction during sleep. Punjabi (2008) in the *American Journal of Respiratory and Critical Care Medicine* noted that alcohol exacerbates OSA by increasing upper airway resistance and reducing arousal responses to airway obstruction, leading to more severe apneas and hypopneas during sleep (Punjabi, 2008).

Tobacco :

Tobacco use, prevalent among over 267 million Indian adults, is linked to difficulties in sleep initiation and maintenance due to nicotine's stimulant properties (GATS, 2016-17). Nicotine dependence is associated with shorter sleep duration and increased sleep fragmentation, which can exacerbate stress and anxiety levels that drive continued tobacco use. Jaehne et al. (2009) in *Psychopharmacology* highlighted that nicotine adversely affects sleep architecture, reducing both slow-wave sleep and REM sleep, thus contributing to a cycle of dependence (Jaehne et al., 2009).

Cannabis use is associated with changes in sleep patterns, though the effects can vary depending on the dose, frequency, and timing of use. While some users report improved sleep initiation, frequent use of cannabis can disrupt sleep continuity and reduce REM sleep. Rong et al. (2017) in their meta-analysis found that cannabis use

(Sleep Medicine Reviews, 2017). Chronic use may lead to tolerance, requiring higher doses to achieve the desired effect, which further disrupts sleep patterns.

Opioids :

Opioid addiction profoundly impacts sleep architecture by diminishing slow-wave and REM sleep. A study in the *Asian Journal of Psychiatry* reported significantly poorer sleep quality among opioid-dependent individuals, perpetuating a cycle of dependence and relapse (Singh et al., 2018). Further, a systematic review in the *Journal of Addiction Medicine* underscores the persistent nature of sleep disturbances even after prolonged abstinence from opioids (Khazaie et al., 2016).

Opioid use is also associated with central sleep apnea (CSA) and restless leg syndrome (RLS). CSA is characterized by the cessation of respiratory effort during sleep due to instability in the respiratory control system. Javaheri and Smith (2011) in *Chest* found that chronic opioid use increases the risk of CSA by depressing the central respiratory drive and altering the arousal threshold (Javaheri & Smith, 2011). Additionally, opioid users often self-medicate for RLS, a condition marked by an irresistible urge to move the legs, particularly during periods of inactivity. Winkelman (2015) in *Sleep Medicine* noted that while opioids can relieve RLS symptoms, they can also lead to dependency and further complicate sleep

disorders (Winkelman, 2015).

Stimulants :

Stimulant abuse, including substances like methamphetamine and cocaine, significantly disrupts sleep patterns. Stimulants increase wakefulness and reduce the need for sleep in the short term but lead to severe sleep deprivation and disrupted sleep architecture over time. Chronic use of stimulants is associated with insomnia, fragmented sleep, and reduced REM sleep. Mahoney et al. (2014) in *Addiction Science & Clinical Practice* highlighted the detrimental effects of stimulant dependence on sleep architecture and daytime sleepiness (Mahoney et al., 2014). In India, stimulant abuse, although less prevalent than other substances, is a growing concern, particularly in urban areas and among youth (Mohan et al., 2018).

Sociocultural Influences :

Sociocultural factors in India significantly influence the sleep-addiction relationship. The stigma surrounding addiction often prevents individuals from seeking help, exacerbating sleep issues and complicating recovery. Traditional practices such as daytime napping and late-night social activities can disrupt natural sleep cycles, particularly in urban areas undergoing rapid lifestyle transformations. Studies in the *International Journal of Social Psychiatry* suggest that cultural perceptions and stigma around addiction significantly impact the willingness to seek treatment in India (Rao et al., 2013). Moreover, familial expectations and societal pressures can lead to stress and anxiety, which further aggravate sleep disturbances and the risk of substance use.

Integrated Treatment Approaches :

Addressing sleep disturbances in individuals with SUDs requires a multifaceted approach. Integrating sleep management into addiction treatment programs can enhance recovery outcomes. Cognitive-behavioral therapy for insomnia (CBT-I) has shown efficacy in treating sleep disturbances among individuals with SUDs. Research published in the *Indian Journal of Psychological Medicine* demonstrated significant improvements in sleep quality through CBT-I in individuals recovering from addiction (Ravindra et al., 2020).

Public health initiatives focusing on sleep hygiene education and substance use reduction are also essential. Community and school programs that emphasize the importance of sleep and provide resources for managing stress and substance use can help mitigate risk factors associated with addiction. The *Lancet Psychiatry* highlights the effectiveness of such integrative approaches in improving both sleep and addiction outcomes (Miller et al., 2017).

Additionally, pharmacological interventions targeting both sleep disturbances and addiction symptoms show promise. For instance, the use of medications such as melatonin for sleep regulation and naltrexone for opioid dependence has been explored. However, the efficacy and safety of these treatments need further validation through rigorous clinical trials, particularly in the Indian context (Espie et al., 2019).

Future Directions and Research Gaps :

Future research should focus on longitudinal studies to better understand the causal relationships between sleep disturbances and

SUDs. There is also a need for culturally tailored interventions that address the unique sociocultural factors influencing sleep and addiction in India. Furthermore, investigating the role of emerging substances and behavioral addictions, such as internet addiction, on sleep patterns can provide a comprehensive understanding of the addiction-sleep nexus.

Moreover, there is a need for more robust data on the prevalence of sleep disturbances among different demographic groups in India, including gender-specific and age-specific patterns. Understanding these patterns can inform the development of targeted interventions. Additionally, exploring the genetic and neurobiological mechanisms underlying the relationship between sleep disturbances and SUDs can provide insights into novel therapeutic targets (Walker & Stickgold, 2010).

Conclusion :

The relationship between sleep and addiction in India involves a complex interplay of physiological, psychological, and sociocultural factors. Addressing sleep disturbances in individuals with SUDs is critical for improving treatment outcomes and preventing relapse. By incorporating sleep management strategies into addiction treatment and promoting public awareness, India can make significant strides in addressing the dual challenges of sleep disorders and addiction.

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Exploring the Relationship between Gut-Brain Axis and Alcohol Addiction

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The pleasurable effects of addictive substances are mediated via their effects on the mesocorticolimbic system (primarily by enhancing dopaminergic activity) which subsequently affects the behaviours related to reward, motivation, emotions, and feelings. Recent studies which are exploring the role of gut microbiota as a key regulator of the brain reward processes, mood and behaviour have indicated microbiota-gut-brain axis as a possible target of intervention in addiction treatment.

The microbiota-gut-brain axis is a bidirectional communication between the gut microbiota and the central nervous system through the enteric nervous system (vagus nerves), immune system, endocrine and metabolic pathways. The microbial colonization of the gut occurs in parallel with the development of central and enteric nervous systems and consists of microbiota from 11 different phyla such as Proteobacteria, Firmicutes, Actinobacteria, and Bacteroidetes constituting over 90% of the microbiome. Apart from forming a protective barrier and preventing the overgrowth of pathogenic bacteria, the gut microbiota provides protection against neuroinflammation.

The gut microbiota exert influence on the brain in following ways:

- By stimulating the vagal nerve afferents (enteric nervous system) leading to release of acetylcholine and thereby, attenuating the immune cell activation through z#-7 nicotinic acetylcholine receptors (a7nACHr) and, also by regulating behavioural responses such as appetite regulation, mood, intestinal inflammation.
- By production/ regulation of various metabolites (bile acids, substance P, kynurenic acid, etc.) resulting in the release and microbial metabolites like short chain fatty acids (SCFAs) that enhance gut barrier integrity, regulate immune system by inducing the expansion of regulatory T cells, modulating cytokine production and crossing blood-brain-barrier to influence microglial maturation.
- 'by affecting the hypothalamic–pituitary–adrenal axis stress response and reducing systemic inflammation
- by producing/ regulating neurotransmit-

ters like GABA, serotonin, dopamine, norepinephrine, etc

EFFECT OF ALCOHOL ON MICROBIOTA-GUT-BRAIN AXIS

Alcohol-induced gut dysbiosis :

- Chronic ethanol consumption has been observed to cause a reduction in gut Lactobacillus, Bifidobacterium, Lachnospiraceae and Ruminococcaceae (involved in production of SCFAs) and an increase in gut proteobacteria like Enterobacteriaceae (resulting in endotoxemia and development of alcoholic liver disease)

Alcohol-induced "leaky gut":

- Chronic ethanol exposure leads to intestinal mucosal injuries, subepithelial blebbing and haemorrhagic erosions, thereby causing a disruption in the integrity of the gut lining. This increase in gut permeability causes the lipopolysaccharides (LPS) and other endotoxins to cross the gastrointestinal (GI) lining into the systemic circulation, leading to a cascade of pathological changes which are associated with development of alcoholic liver disease and low-grade systemic inflammation.
- Alcohol binge drinking induces apoptosis in the gut epithelium, especially in the caecum.

Alcohol-induced neuroinflammation :

- Alcohol also directly causes neuroinflammation by crossing blood-brain barrier and activating the innate immune system via Toll-like receptor 4 (TLR4) expressed on microglia, astrocytes and neurons which in-turn causes release of proinflammatory cytokines like TNF-α and IL-6, as well as indirectly by production of reactive oxygen species, lipid peroxidation products and acetaldehyde.
- These effects of alcohol consumption on the GI mucosa promote the malabsorption of nutrients and vitamins, contributing to the state of malnutrition, which in addition to the lack of a rich diet, enhances the deleterious effects of alcohol on the microbiota and the GI barrier.

PSYCHOBIOTICS – A NOVEL APPROACH TO TREAT ALCOHOL USE DISORDERS:

"Psychobiotics" is a novel term coined by psychiatrist Ted Dinan and neuroscientist John F. Cryan to define both the food ingredients (prebiotics) that induce the growth or activity of beneficial microorganisms exerting positive effects on mental health and a special group of probiotics (ingested live bacteria) that has the ability to produce or stimulate the production of neurotransmitters, short-chain fatty acids, enteroendocrine hormones, and anti-inflammatory cytokines in the gut-brain-axis. They possess anti-inflammatory, antidepressant and anti-anxiety properties.

In recent years, clinical and preclinical studies have provided evidence that psychobiotics are able to improve HPA axis function, mood, behaviour and brain function in stress-associated diseases, such as depression, anxiety disorders which is highly

prevalent among AUD patients. They achieve these by reversing the alcohol dysbiosis and restoring gutmicrobiota balance, promoting the anti-inflammatory environment thus reducing intestinal permeability and translocation of bacterial endotoxin in the systemic circulation, production/ regulation of various neurotransmitters and decreasing neuroinflammation. Dysbiosis is not always present in all AUD patients, but it appears to be related to the prognosis of the disorder, that is, dysbiotic alcoholics who also exhibited leaky gut had more alcohol-dependence, together with the persistence of anxiety, depression and craving after several days of abstinence.

Lactobacillus and Bifidobacterium can metabolize glutamate to produce GABA in the gut. Based on this, a study involving a long-term diet supplemented with multi-species of live Lactobacillus and Bifidobacterium mixture has demonstrated an enhancement of cognitive and memory functions by altering GABA concentrations in the brains of rat models. Furthermore, alcohol-induced decreased abundance of certain groups of gut bacteria, like Lachnospiraceae is positively correlated with decreased striatal D2R mRNA expression (involved in reward pathway), further fuelling the addictive behaviours. Apart from Lachnospiraceae, Lactobacillus rhamnosus is also in involved in dopamine neurotransmission, namely, by increasing the activity of dopamine transporters in presynaptic dopaminergic neurons in brain; this in-turn is results in reward reduction following alcohol intake in rat models. Another study reported that Lactobacillus brevis, namely strains MG5552, MG5405, MG5261, MG5522 induce the expression of Tph1 (tryptophan hydroxylase1) that is involved in serotonin biosynthesis, another neurotransmitter involved in alcohol addiction. Finally, a recent double-blind randomized control trial involving faecal microbiota transfer (FMT) enema in patients with AUD-related cirrhosis with problem drinking reported a significant reduction of alcohol craving and consumption for a period of 6-months. Based on these findings, it can be suggested that psychobiotics-based complementary therapy will prove to be beneficial in treatment of AUD, including reduction of craving and lowering of alcohol consumption.

CONCLUSION:

Gut microorganisms seem to have an important role as an adjuvant, alongside the conventional pharmacotherapy in treatment of alcohol dependence, and therefore, the gut microbiota modulation using psychobiotics and its impact on drinking-related behavioral aspects need to be studied in-depth with rigorously conducted randomized controlled trials.

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Post PG Career Options in Psychiatry

Dr Rezaul Hamid

Abstract :

Post PG Career Options in Psychiatry is enormous in diverse fields each demanding specific traits, expertise and facilities. The demand for mental health professionals is high globally, yet the supply remains inadequate. Fragmented nature of healthcare delivery system is due to overlooking of interconnectedness between physical health and mental health. This scenario not only impacts patient care but also affects the mental health of doctors. Integration of Psychiatry as a parallel subject can only solve this issue. Mental health is a taboo for doctors too in Indian context and suicide is seen higher among doctors than general population. Psychiatrists are also not free of stigma and reluctance to seek help. The issue of burnout among psychiatrists is a significant concern, with potential detrimental effects on personal and professional life. Foundation of research in mental health is based at mindset. Rural settings give more fertile soil for mental health research because of less stigma and high acceptance comparative to urban settings.

Key Words : Psychiatrist, Mental Health, Career Options, Traits, Expertise, Facilities, Workforce shortage, Fragmented Healthcare, Burnout

INTRODUCTION

Choosing a career after PG in psychiatry is very crucial because of its enormously diversified scopes. Before taking a decision one should consider some aspects which are seldom taken into account and seen frequently landing as right person in wrong place. For this author, it took almost 5 years to realize that exclusive private practice is more relevant way to help more people getting back to normalcy, possible to rescue many careers, feasible to prevent more suicides and thereby contributing to the society in a meaningful way.

Long ago a NIMHANS passed out Psychiatrist gets bewildered of career options between private practice, going abroad and staying back at NIMHANS as resident[1]. The fact is worth mentioning here because his father is a celebrated psychiatrist and founder of a big psychiatry hospital somewhere in India.

He gets confused of what option would have been more rewarding and satisfying in the long run and what if he chooses to start private practice and later realizes it was not right for him as he observes his father, who

successfully runs a psychiatric nursing home to be having a hectic and stressful life. In his write up he mentions that out of 16 persons passing out of NIMHANS that year, 13 persons went abroad, mostly to Australia and US. They were mostly tempted for easy process of migration, lucrative job and a great life style. He further mentions that there are more Indian origin psychiatrists in US than in India itself.

Career planning in psychiatry could range from academic institutions, corporate hospitals or pharmaceutical companies, and general health service by central or state government, private practice, administrative job, seeking job & lifestyle abroad and various categories of entrepreneurship in mental health. Few people are even seen to be opting out of psychiatry and choosing some different subjects. Regardless of the position one opts for, expectations from a psychiatrist is almost similar. Why is it so and how the knowledge of behavioral science puts one at the top from where the role is only to render and nothing to receive. An attempt of addressing these issues is made here in this write up.

TRAITS OF A GOOD PSYCHIATRIST

Once a post graduate is out of the medical school and completed his all liabilities with the government, he should introspect and look for the few traits in himself. One to one evaluation and counseling by a senior psychiatrist possibly could yield better result. These are very important because different types of responsibility role as a psychiatrist demand different traits. But for a psychiatrist of any role some common features are expected and these can be achieved over time with habit formation. Psychiatrists are always idealized because of the role of intervention on unhappy families and leading them to become happy families. The responsibility of a psychiatrist is not just limited only to the patient as happens with treatment process of physical illness but it is extended to the caregivers too. Without intervening on caregivers, the optimum outcome cannot be expected. As such some traits are must for a career in psychiatry regardless of the situation where he or she works. Working in academic institute or at abroad does not make anyone immune of these. Caregivers expect their psychiatrist to possess zeal and enough stamina, well dressed, is warm enough to make them feel comfortable while listening to their agonies, pleasant, accessible during emergencies at least over phone. They expect the psychiatrist to be having good communication skills, positive body language, able to infuse confidence and reassure, polite yet firm, having good leadership skill while incorporating family members too in the treatment process, is open minded, respects confidentiality, and participates in advocacy aspect of mental health. General demeanor, skill sets, personality traits and professional expertise are the dimensions the family members are seen to explore in their psychiatrist[2].

LEVELS OF EXPERTISE AND FACILITIES REQUIRED TO PRACTICE PSYCHIATRY

As a basic psychiatrist, it is expected that one should be capable of shouldering the whole spectrum of psychiatry patients including the patients of

1. Twilight area: those where the presentations of the patient oscillates between catatonic stupor and dreaded organicity.
2. Violently suicidal or homicidal.
3. Life threatening withdrawal conditions.
4. Delirium and other conditions associated with various medical and surgical situations
5. Grey area between conversion disorder and seizure disorder including expertise in managing status epilepticus till it reaches an anesthesiologist.

It to ensure that the patient party would reach him out again once the patient is stabilized. Capacity of building a rapport of this level with the caregiver is a must while doing private practice. To render services to these categories of situations one should be equipped with high end facilities and skilled staffs. Institutional practice (government and private) where general healthcare is integrated gives a convenient environment to deal with these categories of situation with ease. Mental health care service infrastructures of this category where agitation and organicity can be addressed concurrently are very rare3.

Expertise, passion and command over the aspects of general medicine to deal with organicity and availability of required facilities (Fig: 1) etc should guide budding psychiatrists in choosing the territory. Following table is the schematic representation prepared by this author which represents the list of requirement of minimal facilities for practice of different territories of psychiatry.

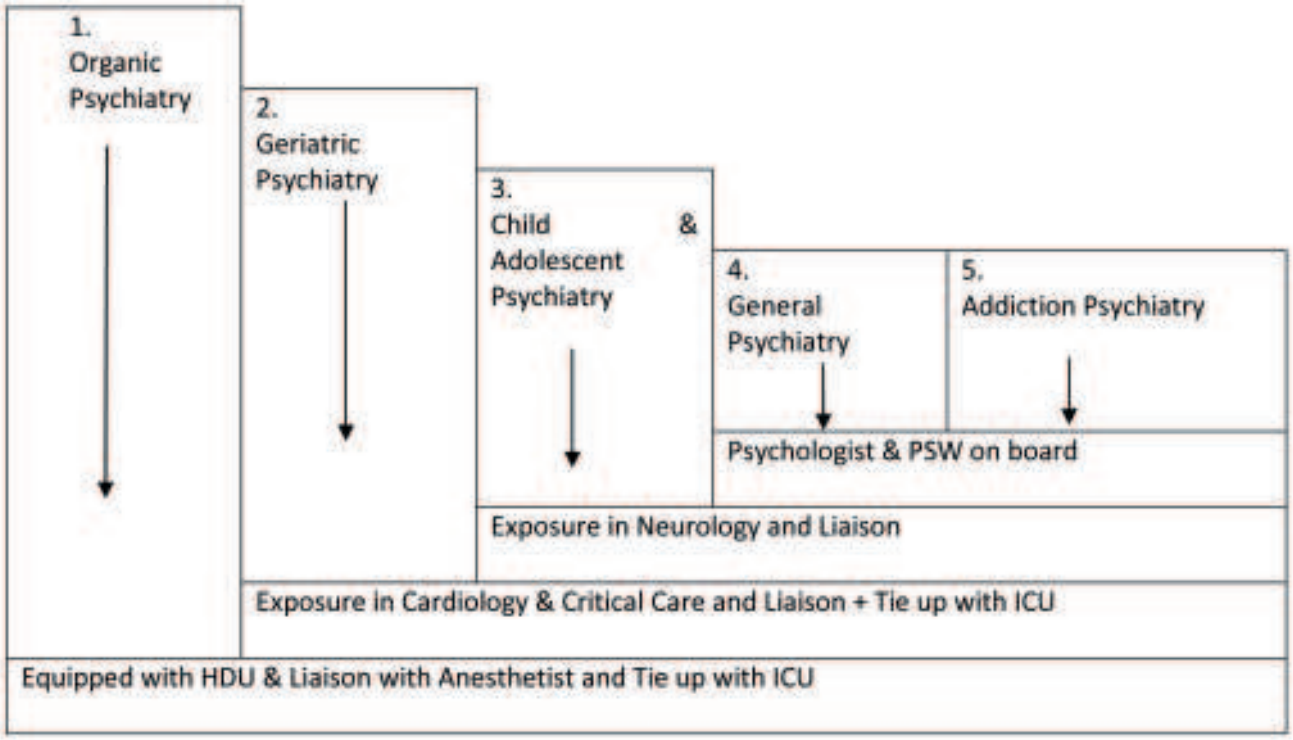

Fig 1: Flow chart depicting requirements of minimal facilities & liaison for practice of different territories of psychiatry. A high end laboratory facility is a must for all types' of settings. A facility which can deal organic psychiatry is perceived as equipped to deal with the entire spectrum of emergency psychiatry. Psychiatry ICU at IHBAS, Delhi is the perfect definition of facility mix for dealing with psychiatry emergencies.

Note: General Psychiatry Setting is conceptualized by this author as A Psychiatry Facility that does not require immediate life saving equipments, facilities and expertise (yet basic facilities are must as per clinical establishment act). It is unsafe to attend patients with altered sensorium; suicidal, violent with threats to others in these types of settings.

To practice organic psychiatry there should be a HDU facility with skilled staffs in addition to at least tie up with anesthetist and ICU. Past exposure of working in cardiology & critical care or at least having outsourced these facilities makes a convenient environment to practice geriatric psychiatry. Practice of child & adolescent psychiatry demands exposure in neurology and liaison with neurologist. For general psychiatry and addiction psychiatry necessity of on board psychologist and PSW cannot be denied. Assessment and intervention at biological, psychological and social dimensions are must to extend a 360* (three sixty degree) care to achieve a highest level of functional recovery in patients.

DEMAND/ SUPPLY : MENTAL HEALTH SCENARIO ACROSS THE WORLD AND IN INDIA

Mental health situation across the globe is almost similarly pathetic. The world mental health report prepared by WHO in 2022 reveals a shocking scenario. Among the top ten causes of global years lived with disability (YLDs), 2019, Depressive Disorder accounts for second cause and Anxiety Disorder seats in the position six [source: WHO, 2019(120)].

WHO reveals mental health conditions are widespread – 1 in 8 person live with a mental health condition, these are under treated - 71% people with psychosis do not receive mental healthcare services and it is under resourced – 2% health budget on average go to metal health sector.

Prevalence of mental disorders across WHO regions, 2019 shows to be 10.9% for Africa, 11.7% for Western Pacific, 13.29% for South East Asia, 14.2% for Europe, 14.7% for Eastern Mediterranean and 15% for Americas.

Suicide has became one of the most important cause of death, mostly in the low and middle income countries with its peak at 15 – 35 years of age group and 58% suicide happening before the age of 50. In India as per official record 2, 71,000 persons commit suicide every year. Unofficially the number is likely to be higher because most of the suicides are heard to be not reported due to strenuous legal process, post mortem report etc

Specialized mental health workforce is very scarce across the globe which ranges from 0.1 median number psychiatrist per 100 000 population in low income countries to 8.6 in high income countries. Almost similar situation is for mental health nurses, psychologist, social

workers and other specialized workers.

In India, the poor condition of mental health is reflected by the scenario of 0.75 number of psychiatrist per 100 000 populations and desirable being 3 psychiatrists per one lakh population4. Minimum number of beds required for 100000 populations in psychiatry was calculated to be 60 and less than 15 were considered to be severe shortage5. As per report, India requires 6.8 Lakh psychiatric beds for 130 Cr population but available psychiatric beds are only 56,000. The deficit is approximate 6 00 000 public psychiatric beds6.

The overall situation is very conducive and psychiatrists as a professional are very sought for with huge potentials of growth in financial, social and academic dimensions. And the scope is uniformly prevalent across the globe.

FRAGMENTED HEALTHCARE

Connectedness between mental health and physical health is inadequately appreciated. Almost nil or very minimal exposure of mental health in undergraduate curriculum is the validated reason for this. This leads to fragmented nature of health care service system and affects access, quality and price of care delivered. The situation is similar across the world. Current system produces handicap MBBS who are deprived of learning of functions of the human brain which is the most complex organ system in the body7. Attempts of bridging this gap with training of doctors under DMHP came out to be failure8. The guideline for Undergraduate Medical Education Regulation 2023 published on 12th June 2023 by National Medical Commission has incorporated many aspects of psychiatry but still perceived inadequate. Giving psychiatry a status of fully fledged subject at MBBS can only alter the situation. This was recommended to Medical Council of India (MCI) way back in 1989 following a workshop and teachers training program for improving UG teaching held at NIMHANS.

This situation is not only responsible for fragmented nature of health service but also for mental health of doctors. That could be reason why mental health is still a subject of taboo for doctors in Indian context and suicide risk was seen to be more among doctors, almost 2.5 times higher than general population9. More than half of the undergraduate medical students have depression (51.3%), anxiety (66.9%) and stress (53%) 10. A study found high prevalence of depression even as high as 30.1% and 16.1% had suicidal ideation among doctors. Another study found the estimates of suicide range from 1.4 to 2.3 times that of average population. It was seen more among males than females11.

These study reports are very terrifying and might have link with raising doctor patient mistrust, violence etc with the mechanism of low frustration tolerance among doctors owing to mental illness and subsequently failing to build and maintain rapport with the patient leading to failing in controlling situations effectively. These aspects need further detailed evaluation. Surprisingly, none of the studies from India has evaluated the stress and psychological issues in senior healthcare professionals.

MENTAL HEALTH OF PSYCHIATRISTS

Stigma and reluctance to seek help is also consistent with psychiatrist12. Among psychia-

trist 43% would consider self-medication for mild/moderate depression; 7% for severe depression; and 15.7% reported that they have treated themselves for depression13. These findings are matter of concern and young psychiatrists should consider these facts seriously from the beginning of the career. Most important aspect that they need to comprehend and implement in life is that they should not burn them out in vain. Hectic schedules of post graduate and senior residency days might kick start the process of burnout which ultimately culminates into a diagnosable entity.

BURNOUT

Job related stress is called burn out. It results from chronic exposure of stressful jobs. It is rather a syndrome than a discrete entity. It triggers cascade of events in the bodily physiology and mind which ultimately leads to serious mental health issues or deteriorates prevailing mental health situation and frequently leading to suicide.

The term was introduced during 1970s by Freudenberger and subsequently explained in 3 qualitative dimensions by Maslach et al but not incorporated in to DSM 5. One third physicians experience burnout in a given time interfering personal wellbeing and quality of rendered services14. In a study comparing incidences of burnout between US physicians and a population control sample, Shanafelt et al observed an incidence of symptoms of burnout of 37.9% in physicians compared to 27.8% in control population15. The 2020 Medscape National Physician Burnout and suicide report found incidence of burn out to be 35% among psychiatrist16. Burnout leads to decrease job satisfaction, absenteeism and cynicism. Consequences affect personal life, family life, anxiety, depression, isolation, substance abuse, frictional and broken relationships and divorce. Burnout could have more serious implications and has been linked to suboptimal patient care and resulting in lower patient satisfaction, impaired quality of care and subsequently leading to medical errors, malpractice suits and litigations.

ACADEMICS AND PSYCHIATRY

Chasing academics only in great institutes and foreign soil is an illusion. Foundation of academics is projected from the mindset and it can germinate anywhere. Gregor Johanes Mandel started his experimental program on hybridization while he was at a monastery as a priest17. Superior observation power and high order reasoning skills are the basic requisites for an academician/ researcher.

The possibilities of applying these are directly proportional to the quantum of data. Stigma and discrimination of mental illness is more in urban area than rural and acceptance is higher in rural settings18. A focused mindset can contribute to mental health research from anywhere and scopes in mental health research are enormous. Even funding dependant research in mental health stands out as another type of career in mental health for psychiatrists.

CONCLUSION

To stay in to and making a meaningful voyage to be satisfactory in the long run, one has to consider many aspects and prepare themselves accordingly. Few points are constant regardless of the situation. Developing passion of rendering expertise for the great purpose of rescuing

suicides and fallen career is one of most elite form of professional work in this planet earth. No other professions in this world are bestowed with this level of supremacy.

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Addiction among Children and Adolescents

Dr Manoj Kumar Sharma

Addiction refers to the chronic, relapsing, and compulsive act of engaging in specific behaviours including excessive psychoactive substance use (alcohol, caffeine, cannabis, hallucinogens, inhalants, opioids, sedatives, hypnotics, and anxiolytics, stimulants, and tobacco); and non-substance behaviours (e.g., gambling, gaming, eating, sex, exercise, shopping, internet use, social media use, work) that occur despite the associated negative consequences. The latter are broadly called 'behavioural addictions'.

Owing to the diagnostic manuals (the American Psychiatric Association's Diagnostic and Statistical Manual for Mental Disorders, fifth edition [DSM-5], World Health Organization's International Classification of Diseases, 11th revision [ICD-11]) used in psychiatry, substance addiction is more accurately referred to as substance use disorders which subsume disorders of abuse and dependence. The DSM-5 recognizes only gambling disorder as a behavioural addiction while the ICD-11 recognizes gambling disorder and gaming disorder together with substance use disorders as addictions.

The National Survey on Extent and Pattern of Substance Use in India (2019) published substance use (as opposed to dependence and harmful use) in children and adolescents aged 10-17 years of age. The prevalence rate was found to be 1.8% for opioid use, 1.30% for alcohol use, 1.17% for inhalants use, 0.9% for cannabis use. The National Commission for Prevention of Child Rights' 2017 study focused on the pattern, profile and correlates of child substance use in India. The commonest drugs of abuse were tobacco, alcohol, cannabis and inhalants, followed by pharmaceutical opioids, heroin/ smack and sedatives, in decreasing order of frequency. Drug use showed a progression from licit to illicit substances. The average age at the initiation of tobacco use was about 12 years followed by inhalants, cannabis and alcohol use (about 13 years). Opioids and pharmaceutical drugs were initiated at 14–15 years of age followed by injectable use. This is typically indicative of the gateway theory of progression of substance use, i.e. the hypothesis that drug use usually follows a pathway wherein a user begins by using legal drugs such as tobacco and alcohol, proceeds to use marijuana and later to illicit or so-called 'hard' drugs. Data regarding prevalence of behavioural addictions is much less studied.

A 2021 cross-sectional study conducted in Maharashtra found prevalence rates of internet gaming disorder as 10.6% in 13-19 year olds (Singh et al.).

Psychosocial factors of the child or adolescent are an important factor in the process of development and maintenance of an addiction. On average, street children in India initiated substance use 1–1.5 years earlier compared to those living at home. Familial risk factors such as substance use among one or more family members (57%), family conflicts (47%), getting beaten up or abused (46%) were common. Nearly half the children using substances were working, part- or full-time, in unskilled jobs. Peers using substances were common (>80%) and 'peer pressure' was reported by 40% as the reason for continuing drug use. Due to these complex and interrelated factors, multiple areas need to be targeted for effective treatment.

Assessment and Diagnosis

While substance use may lead to abuse or dependence and early onset of regular use further increases the risk of developing these disorders, substance use per se is not sufficient for a diagnosis. Similarly, 'excessive' use of the internet or gaming is not sufficient to diagnose a behavioural addiction or even be categorised as 'problematic use'.

Substance abuse is only diagnosed when there is evidence of a maladaptive pattern of substance use with clinically significant levels of impairment or distress. Impairment means an inability to adequately function in one or more major areas of life, risk-taking behaviour, an increase in the likelihood of legal problems due to possession of substances and exposure to risky situations. Substance dependence or behavioural addiction implies the client meets a specific minimum number of criteria such as withdrawal, tolerance, and loss of control over use. The individual may take the substance in larger amounts or indulge in behaviours over a longer period than was originally intended They may express a persistent desire to cut down or regulate substance use or behaviour and may report multiple unsuccessful efforts to decrease or discontinue use They may spend a great deal of time obtaining substances, recovering from its effects or using behaviours. Craving is an intense desire or urge for the drug or behaviour. The individual may continue substance use despite having persistent or recurrent social or interpersonal problems. Important social, occupational, or recreational activities may be given up or reduced because of substance use. The individual may withdraw from family activities and hobbies in order to use the substance or indulge in the behaviour.

The gold standard for diagnosis is psychiatric interview. In the case of adolescents and older children, it is developmentally expected that they may experiment with a wide range of attitudes and behaviours including the use of psychoactive substances. Most of these use substances such as alcohol and cigarettes, with some advancing to the use of marijuana. A much smaller portion proceeds to the use of other so-called

"hard drugs". Adolescents who present to the clinic with substance use and frequent intoxication often show significant levels of unexplained change in mood, cognition, and behaviour which can aid in diagnosis. Behavioural changes may include disinhibition, lethargy, hyperactivity, increased sleepiness, and hypervigilance. Changes in cognition may include reduced concentration, changes in attention span, and in rare cases, hallucinations or severe disturbances in thinking such as delusions. Mood changes can range from depression to euphoria. The manifestations of substance use and intoxication vary with the type of substance used, the amount used during a given time period, the setting and context of use (set/setting), and the individual factors like experience with the substance, expectations of drug effect, and the presence or absence of other mental health issues. In the case of behavioural addictions, changes in behaviour with changes in mood (anhedonia, low mood, disinterest, etc.) are more frequently seen.

A common reason for presentation is impairment in psychosocial and academic functioning in the form of family conflict, interpersonal conflict, academic failure, deviant and risk-taking behaviour. They may present with comorbid psychiatric disorders such as conduct disorder, attention-deficit/ hyperactivity disorder (ADHD), and mood, anxiety, and learning disorders, histories of childhood sexual abuse and other traumatic life events. All these exacerbate the risk of addiction while also being used as a way to "self-medicate". Hence, a thorough psychiatric history is essential to effective treatment.

Other developmental factors that contribute to substance use include psychosocial factors such as adolescent feelings of being invulnerable, need for autonomy, and ''peer pressure.'' They are influenced by cultural factors such as media promotion of substance use too.

In the face of concerning behaviours screening for the need for more comprehensive evaluation is essential. Asking about quantity and frequency, the presence of adverse consequences of use, and the adolescent's attitude toward use are usually covered. Few screening tools which are commonly used are WHO's ASSIST for all substances, AUDIT (WHO, 1982) for alcohol, SOCRATES (Miller & Tonigan, 1996) for alcohol and other drugs, and Fagestrom Test for Nicotine Dependence (Heatherton, 1991). Additionally, toxicological tests of urine, blood, and hair samples to detect the presence of specific substances should be part of the assessment of substance use, whenever possible. Behavioural addictions can be assessed using the Internet Addiction test (Young, 2009), Internet Gaming Disorder (Pontes, 2016) and Gambling Related Cognitions Scale (Raylu & Oei, 2004).

Flexibility, empathy, and non judgemental attitude is required from the clinician. While confidentiality may be essential to get accurate diagnoses, its limits must be clear to the client who is a minor as the therapeutic relationship

can be key to successful treatment or reduction of harm.

Non pharmacological interventions

Treatment factors associated with a good outcome are longer time in treatment, psychosocial factors like use of practical problem solving approaches, involvement in leisure time activities, work, and school; peer and parental support.

Prevention or primary intervention

The National Policy for Drug Demand Reduction, 2014 states that the preventive programme needs to focus on children, both in and outside educational institutions especially high-risk groups such as commercial sex workers, children of tourists and truck drivers, the children of alcoholics and drug addicts, children of HIV-affected parents, street children, prisoners and school drop-outs, should be specifically addressed. Preventive efforts must also target reduction in supply. This becomes a tricky subject when it comes to behavioural addictions as access to internet, gaming, etc. cannot be banned. However, restriction of hours and type of use as per developmental stage of child may be recommended and overseen by caregivers. Prevention programmes should focus on providing life skills education and teach methods to handle stress as well as peer pressure, as opposed to focusing only on substance use or behavioural addiction aspects which may not be as effective and at times, may arouse curiosity and experimentation. Hiring a full-time trained psychologist working as a counsellor in schools is already recommended by the Ministry of Human Resource Development. They, or teachers, need to be trained to identify and manage children at risk of substance use and behavioural addictions and psychoeducate their parents. For highly vulnerable children especially with substance use, vocational training centres could be sites for interventions for out-of-school children.

Secondary intervention

The early detection and preventing progression of substance use or excessive behaviours to abuse or dependence is the next crucial step. These focus on early, intermittent users for whom psychoeducation, awareness raising in communities may be recommended. General practitioners and paediatricians need to be appropriately sensitised. They may benefit from learning to administer commonly used screening tools.

Treatment or tertiary intervention

More than two-thirds of children who use substances never sought any help highlighting the treatment barriers. There is a need for more and better access to specialised treatment services for child substance users. Behavioural addictions, as an emerging phenomenon, are even less recognised in the population. Rehabilitation efforts focusing on skill building and vocational training should be provided whenever indicated. Social workers need to be involved to address the myriad of social issues. Family therapy or significant family/ parental involvement should be a component of treatment.

Psychotherapy is an essential component of treatment for substance use disorders and is essential for behavioural addictions. The treatment programs and interventions should aim to minimise treatment dropout and to maximise motivation, compliance, and treatment completion. Cognitive behavioural therapy (CBT) is a form of psychotherapy that is widely used in addiction treatment, whether it involves substances or behaviours. CBT works by helping manage or reduce symptoms of addictions by replacing negative, often distorted thoughts with healthy, realistic ones.

Another commonly used therapy modality is Motivational Enhancement Therapy which uses the Stages of Change model. Each individual with addiction goes through five stages of change: pre-contemplation (not willing to change), contemplation (undecided about change), preparation (willing to change and preparing for it), action (putting plan to change into behaviour) and maintenance (continuing behaviours to maintain change). Lapse and relapse of addictions are considered part of these stages which are prepared for through Relapse Prevention Therapy. These therapies make use of cognitive and behavioural therapy techniques and principles to help the patient move through successive stages to reach maintenance.

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Addiction in LGBTQI community

Ms. Budhiswatya Shankar Das
M Phil PSW, PhD Scholar

Introduction

Research has shown that rates of substance and drug abuse is high among the lesbian, gay, bisexual, transgender, queer and intersex (LGBTQI) population as compared to other groups. Substance abuse is a serious problem and a longstanding concern among the lesbian, gay, bisexual, transgender, queer, intersex (LGBTQI) individuals. Starting from alcohol misuse to the usage of various other substances like opioids and heroin many individuals within the LGBTQ+ community struggle with addiction.

LGBTQI+ individuals face minority stress from encountering various obstacles results in negative outcomes. There are numerous factors that contribute to this pattern of misuse and substance abuse among the people from the LGBTQ community.

First, lack of support from primary and secondary support system is a major reason for individuals turning towards substance. Many LGBTQ people remain in closet due to the fear of being in an unsupportive culture and not being accepted by family and friends. Few who choose to come out face rejection and isolation; therefore, to help dull the pain they often chose substance.

Social stigma and discrimination are yet another reason for LGBTQ individuals to opt for substance as a way of coping. Despite laws and with the growing acceptance in the country yet individuals from the community encounter discrimination and harassment in various forms. This may come from friends, acquaintances, strangers and may take the form of school bullying to workplace harassment to even hate crimes.

Third, internalized homophobia is another significant reason for LGBTQ people to turn towards substance dependence. Internalized homophobia is the inward direction of societal homophobic behaviors and refers to the subjective psychological impact of these negative attitudes. Therefore, the result is usually self-loathing and an inability to feel comfortable in being who you are. Thus, people from the community as a way of coping chose substance to minimize to their everyday pain of being who they are.

Unresolved trauma is often the root cause for high intake of substance. Many LGBTQ individuals have histories of physical, sexual and emotional abuse that sets the stage for their need to self-medicate.

Treatment barriers among LGBBTQI+ population

Low income, poverty and existence of mental illness do make access to healthcare more challenging. Moreover, they encounter a separate layer of barriers when they are finally ready tom seek treatment. Most notably the segregation and discrimination that they face from health care professionals. Health professionals are not always free from prejudices that can be explicit or subconscious or even lack of adequate training is still a significant problem.

Many among the health care system lack enough knowledge and don't have a clear understanding of what it means for an individual to identify as a transgender, homosexual or bisexual. Few even believe that being transgender or gay is indicative of a mental illness. At times, instead of providing treatment with care they are devoid of treatment at all.

Prevention strategies and Interventions

Family support for sexual orientation, gender identity and gender expression are one of the primary influences on substance abuse. LGBTQ+ individuals who has support and are accepted by their parents and caregivers are better able to withstand other sources of stress like bullying at school/ college or work place harassment. Individuals whose families join activities, appreciate clothing or hairstyle choices, be cordial with their choice of partner and affirm their children's gender or sexuality preferences are less likely to have problems with substances. In fact, it helps LGBTQI individuals have better self-esteem, better physical and mental health conditions.

LGBTQI+ individuals can find and join a local LGBTQI group or organization that works on gender-sexuality issues and does take a stance against substance abuse. This helps individuals find friends who will act as positive influences when it comes to drugs and alcohol.

By creating an LGBTQI- affirming environment professionals can set an affirming tone by reducing stereotypes and highlighting gender and sexuality diversity-inclusive language. This in turn will help prevent bias and bullying and LGBTQI individuals will not turn towards substance intake.

Teaching and creating awareness about substance intake among the LGBTQI+ people are another way of preventing substance abuse. When individuals are provided adequate and correct information related to alcohol abuse and drug usages, they become cognizant about its harmful effects. Thereby increasing chances of less intake and focusing on adaptive way of coping with life stresses.

Conclusion

All individuals deserve respect and acceptance from their families, friends, co-workers and community as a whole. Too many people from the LGBTQI population still do not get the acceptance and support that would help them avoid substance usage. Therefore, as health professionals we can take steps to support LGBTQI people in our lives and our surroundings so that they be treated with more respect and make them feel more inclusive. For LGBTQI individuals who are already struggling with substance dependence must be treated without discrimination and be accepted as any other individual who is been treated for substance or mental health issues.

Substance abuse and Mental Health Disorder

Dr. Priyamvada Sharma

The Global Burden of Disease Study estimates that illicit drugs killed nearly 7.5 lakh people worldwide in 2017. India lost an estimated 22,000 lives. Some estimates put the global drug trafficking trade at $650 billion.

The recent report on Magnitude of Substance Use in India, 2019 showed that alcohol is the most common substance used, followed by cannabis and opioids. The prevalence of alcohol use is 4.6%, followed by cannabis at 2.8% and opioids at 2.1%. Among opioids, heroin use was the highest at 1.14%, followed by pharmaceutical opioids at 0.96% and opium at 0.52%. Other types of drugs, such as cocaine (0.10%), amphetamine-type stimulants (0.18%), and hallucinogens (0.12%), are used by a small proportion of the population.

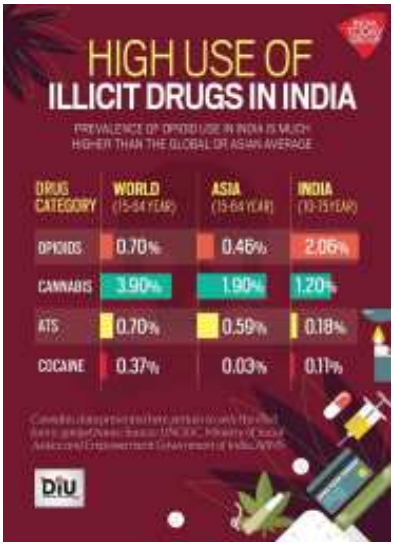

Figure:1 Status of Substance Use World: Asia: India

Substance abuse pose significant health and social challenges. Recent research reflects that substance use and related disorders have emerged as major public health challenges to health professionals and policymakers alike. Substance use complicates almost every aspect of behavior. After entering into the brain, mind-altering substances can interrupt or change the normal performance of the brain and these changes lead to compulsive drug use.

Figure 2: Types of Abuse substances

Substance use and mental disorders commonly co-occur because of overlapping genetic vulnerabilities, common environmental

triggers like stress, and involvement of similar brain regions. Some of the most commonly used illegal substances include Cannabis, Cocaine, Opioids (like Heroin), MDMA (Ecstasy) and Amphetamine, while prescription drugs liable to misuse include pain relievers like morphine, tramadol, cough suppressants like codeine and anxiety reducing drugs like Benzodiazepines (diazepam, lorazepam and oxazepam) Figure-2.

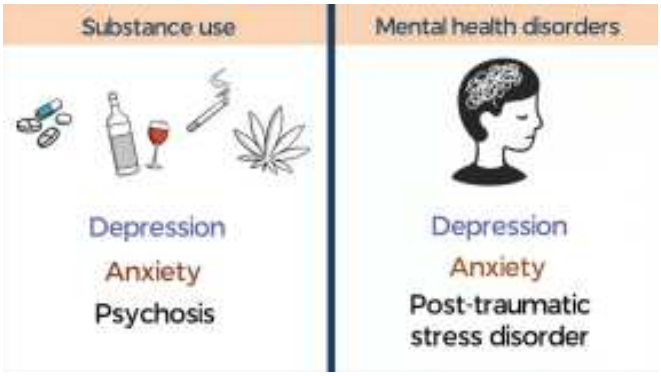

Figure-3 Substance use and Mental health disorder

Substance abuse in the country has assumed alarming proportions. Recent studies reflect that substance use and related disorders have emerged as major public health challenges to health professionals and policy makers alike. Substance use complicates almost every aspect of behavior. After entering into brain, mind-altering substances can interrupt or change the normal performance of brain and these changes lead to compulsive drug use. Substance use and mental disorders commonly co-occur because of overlapping genetic vulnerabilities, common environmental triggers like stress and involvement of similar brain regions Figure -3.

The National Mental Health Survey (2016) found that the prevalence of alcohol and tobacco use was 4.6% and 13.1% respectively, and the treatment gap was 86.3 %. Deaddiction centers play a multifaceted role in addressing the complex challenges posed by substance abuse and addiction. By offering a range of services spanning prevention, intervention, treatment, and aftercare, these centers contribute significantly to mitigating the adverse effects of addiction on individuals and society as a whole. However, continued efforts are needed to expand access to quality addiction treatment services, strengthen partnerships, and promote a comprehensive approach to addressing substance abuse issues in India.

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RIFAXIMIN- *is it underused in Alcohol induced delirium*?

Jayanta Kurmi[a], Kamal Nath[b]

Case 1: - A 37-year-old married male hailing from a rural area of Assam belonging to the upper lower socio-economic class presented to Psychiatry dept. with chief complaints of chronic alcohol abuse in dependence pattern for 15 years, 2 episodes of abnormal jerky movement of the body in the last 2 days, irrelevant talking, restlessness, inability to recognize family members at times, and decreased sleep for the last 2 days following cessation of alcohol abuse 4 days ago. Past history of similar illness: 1 year ago, when he was abstinent from alcohol. He is a known case of Diabetes Mellitus and chronic pancreatitis.

Case 2: - Mr. AB, a 39-year-old married male, was brought in as an emergency in the Psychiatry Department with a history of irritability, abusive and assaultive behaviour, restlessness, expressing hearing voices that someone is calling him and threatening him, seeing things not seen by others, sweating, tremors, and poor sleep and appetite for the last 3 days. The patient had a history of alcohol consumption for the past 12 years, exhibiting a pattern of dependence. His last drink was a week ago. His blood pressure and pulse rate were higher at the time of admission, and a mental status examination revealed psychomotor agitation, anxious mood and affect, auditory and visual hallucinations in perception, and impaired cognitive functions.

Case 3:- The patient was a 42-year-old married male of a nuclear family belonging to lower socioeconomic status hailing from a rural background and presented to the casualty department of Psychiatry with tremulousness of the body, disorientation, irrelevant talking, seeing things not seen by others for 1 day, along with disturbed sleep. The patient was agitated, had mild icterus, tachycardia, raised blood pressure, and was heavily sweating at the time of presentation. The patient had a history of consuming alcohol for 22 years, with a regular intake of 375 mL for 4 years and the last intake 3 days ago. On examination, the PR was 117 bpm, BP was 150/104 mm Hg, SpO2 was 98%, with normal breath sounds and heart sounds, and a soft abdomen. A mental status examination revealed poor

eye contact, increased psychomotor activity, perceptual disturbances, and impairment in cognitive functions.

A diagnosis of Alcohol withdrawal delirium (ICD 10) was made in all 3 cases and standard treatment with Inj. Lorazepam (12-20mg intramuscularly), Inj. Thiamine (200-400 mg/day), IV fluids was started as per protocol. Proper nursing care, monitoring of vitals and urine output was maintained. Derangement of liver functions was common to all three cases with biochemical and radiological (CT Brain & USG Whole Abdomen) investigations revealing no other significant abnormality.

No significant improvement in the clinical and neuropsychological profiles of all three patients was noticed despite our best efforts. Tab Gabapentin 300mg twice daily was added as an adjuvant after 3rd day. All three were still in delirium even on their 4 & 5th days of hospitalization. There was no improvement in the Clinical Institute Withdrawal Assessment for Alcohol, revised (CIWA-Ar). A Medicine opinion was sought in all cases to rule out any organic cause including Hepatic Encephalopathy but nothing came out from their side.

In these stages, Tab Rifaximin 400 mg twice daily was added as an experimental drug in the first case. To our surprise, the patient showed a significant improvement in neuropsychological profile and CIWA-Ar score from the 2nd day of starting Rifaximin. This led us to use Rifaximin in the 2nd and 3rd cases as well, giving us a satisfactory outcome in the remaining cases. Inj. Lorazepam was tapered gradually, and subsequent management, including de-addiction, was done as per protocol.

Rifaximin is an antibiotic used to treat diarrhoea associated with irritable bowel syndrome, decreases the risk of overt HE recurrence in adults, and treat travellers' diarrhoea caused by Escherichia coli. Rifaximin acts against both gram-negative and gram-positive anaerobic and aerobic bacteria. Because of its nonabsorbable nature, this antibiotic is mostly utilized in the treatment of gastrointestinal tract infections[1,2]. Dose requirement is not required in case of hepatic dysfunction[3].

Out of all reasons for altered consciousness in HE, the increased serum level of Ammonia (NH3) is the most widely accepted hypothesis. Normally, NH3 is mostly produced inside the lower intestinal tract by the bacterial metabolism of protein and glutamine. In the liver, it gets transformed into urea and excreted in urine and faeces. In patients with Hepatic Encephalopathy (HE) there is altered elimination of NH3, leading to a rise in plasma concentrations. It then crosses the blood-brain barrier and stimulates a series of changes that explain the syndrome's clinical picture[4].

So, in our case series, though they did not meet the clinical diagnostic criteria for HE, there is every possibility of alterations in the gut flora and abnormal NH3 production

according to the above-mentioned hypothesis, and they responded to the addiction to rifaximin even in the absence of overt clinical HE syndrome.

From this finding in the above case series, there is a possibility of other mechanisms involved in relation to the severity and chronicity of delirium, as explained above. A better outcome in the management of Alcohol Withdrawal Delirium using ***Rifaximin*** may be expected and tried in a greater number of cases when it is not responding to conventional treatment and in cases bearing the possibility of subclinical HE. This needs further long-term observation and research.

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Creativity Section

The Price of Success

I wonder how I climbed the ladder of success,
I wonder how I reached the top,
I wonder how I engulfed myself with wealth,
I really wonder how I travelled from bottom to top.
Now I wonder, I have no time to look around,
I have no time to look for the morning dew,
I have no time to hear the chirrup of birds,
I have friends but close very few.
When I look down from high skyscraper
everything looks very small,
to friends I look very distant
far away planet and very tall !
I miss my childhood simple friends,
I miss my peaceful sleep and dreams,
I miss my casual walk and beer,
I lost the key to happiness my dear....

Dr Soumitra Ghosh

Revolving Door

Dr. Nishu choudhary

Unsettled, unnerved, uncertain,
The anxiety, like a lump
In my throat.
Not knowing where to start,
Not knowing where it'll end.
I try to dismiss the image of that last bottle of yesterday,
But the constant voices in my head make me betray.
Not knowing if this is what I want,
Shakingly, I start my hunt.

We're all supposed to be in the same boat,
And yet, each of our masts have their own burden to bear
Some of us trying to stay afloat,
While some, no longer care.

Beads of sweat form all over my body,
As I finally taste my remedy!

We're all supposed to be on the same train,
And yet, the opportunities we left behind
Some of us pulled the chain,
While some, just want to re-wind.

The whiskey flowing in my veins,
Rids me of my bodily pains
And I lament the destruction it has caused, one last time

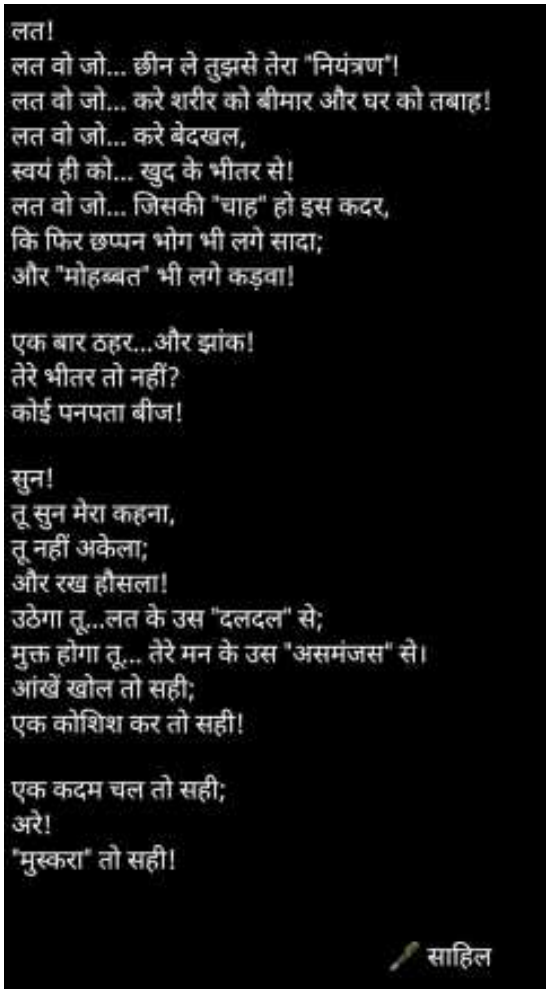
PRESENTED AT IPS EZPGCME 2024
Before I can lay, unbothered, on the grime.

Dr. Nishu Choudhary, 2nd year M.D. Psychiatry resident, IOP-COE, Kolkata

Spirit of College Life

One day we"ll part from our college and go out in the world as Juvenile medicons, full of vigour. We should take with us a good understanding of many things, a willingness to accept-responsibilities and would ourselves as medicos to be loved and trusted. We should gift ourselves eagar mind, kind heart and a desire to help the needy. We should try to inculcate within us a deadly struggling spirit and strive for perfection in our deeds. I believe successful medicos are not those who have won scholarships and passed exam with flying colours, though these are good things to do. I count as successes those who learn to be good hearted and tender, sensible and trustable, calm and composed, good sound medicos the medical fraternity of the world can learn on. And as said :- The root cause of suffering in this world is feeling of being unwanted and uncared. So, I believe the spirit of college life should be learning the art of lending our glittering concern to others, to heal them even in miniature.

Niska Sinha



Paper Flower

—Dr. Hrishikesh Sarma

"Insanity is doing the same thing over and over again and expecting different results"-

Albert Einstein

Rupak laughed out loud after reading the quote from the last page of the newspaper.

'What's so funny?', a female voice fluttered from the kitchen.

'Nothing special, just refreshing a bit, consumed too much of patient's worries for last few days,' Rupak is skimming through the newspaper.

Malati carried a plate of Roti-sabzi for Rupak's breakfast and placed it on the dining table.

'How I am looking today?' Malati asked with a smile.

'The mekhela chador is looking good on you,' Rupak replied nonchalantly.

Malati was upset with Rupak's casual reply. She diligently groomed herself for her friend

Jahnabi's wedding.

'Take leave for tomorrow if possible. Parent's meet is scheduled at Munu's school. You have

always skipped, I had to face alone everytime.' Malati said with resentment.

'Will try my best. We are dealing with Japanese encephalitis epidemic. I am the only medicine specialist in the hospital. So I can't confirm.' Rupak replied.

Rupak received a message in his mobile while going downstairs by the apartment's lift.

'Reaching tomorrow at 1 pm. Next Sunday, having a fantastic reunion with batchmates. See

you at airport tomorrow *f*^{o},' Rupak was slightly surprised on receiving the message. He wanted to say many things in reply, but ended with typing just an 'OK'.

It is almost 3 pm but Rupak is yet to finish seeing patients.

'Let's go for lunch,' Rupak's colleague Dr. Rajesh said.

As Rupak is about to get up from his chair, a patient hurriedly entered his room and said, When will I get the CT Scan report?'

'You should get by 6. You can WhatsApp the report to me,' Rupak wrote down his phone number on a piece of paper and handed it over to the patient.

'You appear a bit different to me today.' Rajesh said sipping a cup of coffee.

'You mean?' Rupak asked.

'I mean you look bit euphoric, energetic. You never give your contact no. to patients. But today you broke the rule. What is so special today? Is it Malati's Birthday? Today saw her status at WhatsApp. She dressed like a newly married bride,' Rajesh said.

'No, no, today is her best friend's wedding. I am happy for something else. I am excited for the reunion party of our batch coming on next Sunday,' Rupak said enthusiastically.

'Ohh…Really? I have never seen you attending any reunion party. What is so special this time?'

Rajesh said sarcastically taking a bite into the chicken roll.

'Nothing special.' As if Rupak is hiding something.

'Come on dude. You can trust me.', Rajesh was blatantly curious.

'This morning got a text message from Prarthana, will be meeting her almost after five years.'

Rupak got nostalgic.

'Are you serious? It seems you are in a self-destruction mode.' Rajesh said angrily.

'Come on, I can't severe my friendship with her just because of a misunderstanding that happened five years ago.' Rupak defended Prarthana.

'Do whatever you like, but be careful.' Rajesh wiped his face with a tissue paper.

'Perhaps I was wrong, maybe I was just a good friend for her.' Rupak's eyes got rheumy.

'Absolutely not. You were topper of the batch, she saw bright future in you. That's why she was so much attached to you. The moment she met a well-established guy in New Zealand…..'

'Okay, let's leave all these.' Rupak interrupted Rajesh before he could finish.

'Sorry didn't get the leave, next time….'

'Munu is not just my daughter, you also have responsibilities,' Malati yelled before Rupak could complete.

'Please have some patience, let's talk over the dinner', Rupak tried to assuage the situation.

'Order your dinner on Zomato.' Malati shut the door on Rupak's face.

Next Morning Rupak diligently shaved his face and brought out a pair of brand new T-Shirt

and denim jeans from his closet. While driving to the airport he was immersed in an unknown thrill.

He came out of the car after parking and started checking messages on his phone.

'Hello headmaster, how are you?' Rupak looked back at the call of a man with red turban.

'Ohh, it's you Arnold,' Rupak was ecstatic on meeting his batch mate Arnold alias Dr. Gurpreet

Singh from his medical college days.

'How's life Dude?' Arnold enquired.

'Hospital-Home-Hospital, shopping Mall and movies in between.' Rupak laughed.

'At least you are seeing patients. I can't even remember when I held the stethoscope last time. I had to look after family business against my will. Papa is greatly connected to Assam.

Despite the losses he is hell bent on retaining the tea gardens. Now he is acquiring two more.

He is too busy to leave our Mumbai office, so I was sent at the last moment for the paperwork.' Arnold explained his obligations.

'You group is so big, why don't you enter into hospital business?' Rupak questioned.

'I do agree, but papa is more interested in real estate and hospitality business.' Arnold clarified.

'I see.' Rupak replied.

'By the way are you informed about the reunion party of our batch?' Rupak enquired.

'Yes, yesterday I saw some messages in our WhatsApp group, but I was too busy to look into the details.' Arnold answered.

'Today I am here to receive Prarthana,' Rupak spoke fervently.

'Great, will be meeting her after a long time. My uncle is landing at 1. He is taking the direct flight from New Zealand.' Arnold informed.

'Maybe they are in the same flight.' Rupak smiled.

.....

Arnold's uncle came and entered into Arnold's car.

'Rupak!' a lady clad in black palazzo and white linen top waved her hand to signal her arrival.

'Welcome.', Rupak greeted Prarthana.

'Let's rush to hotel, lots of planning left for the reunion party. Arindam, Mala and a few others

have just arrived at the hotel.' Prarthana said while checking the messages on the mobile.

'Hi Prarthana, how kiwis are treating you?' Arnold said with his usual candour.

'My goodness! You just disappeared Arnold. You don't even bother to reply when someone

tags you in the group.' Prarthana pepped up the conversation.

'Oh! I am helpless. Life has been limited to clients and meetings. Now I beg your pardon,

I have to accompany uncle to hotel. See you at the reunion party. I will explore New Zealand

through you.' Arnold bid goodbye to Prarthana.

'Which hotel have you booked?' Prarthana asked.

'Green Assam' Arnold replied.

'Wow! My booking is also there.' Prarthana said 'Fantastic. See you there.' Arnold walked towards his car.

'Bye', Prarthana took her steps towards Rupak's car.

Suddenly her eyes caught hold of Arnold's car. She changed her direction towards Arnold's car. Rupak followed her. Arnold was about to start the engine, when he saw Prarthana coming towards his car. He came out of the car.

'Is this latest Rolls Royce Phantom?' Prarthana was super excited.

'Yes! Papa is crazy for new cars. Although I am quite the opposite,' Arnold smiled.

'Rupak, if you don't mind, can I go to the hotel in Arnold's car?' Prarthana said hesitantly in a low voice.

Arnold was bit embarrassed.

'It's absolutely okay. See you at the reunion party', Rupak tried to appear normal hiding all his emotions.

A heavy downpour just inundated the city. Horrible traffic jam choked all the main streets.

Rupak is homebound braving the traffic. He has switched on the radio to detach himself from the chaos around. Few minutes later, he had to come to a complete halt because of a gridlock.

Just then a boy of about 12 to 13 years knocked at the window of the car. Rupak rolled down the window.

'Sir please take this flower for just twenty rupees. See, this is garden fresh.' the boy offered a scented red rose.

'Such a terrible traffic, by the time I reach home, your fresh flower will completely wither.' a pale smile blinkered at his face which is marred by profound gloom.

'Sir, wait!' the boy took out another flower from his bag and offered Rupak, 'This costs only ten rupees. This will not wither, but this is a paper flower……..

MINCEMEAT

- Dr. Rubina Khan
1ST YEAR PSYCHIATRY PGT
CNMC

THE CRAVING IS IRRESISTABLE ,

THE WANT IS UNDENIABLE,

ITS NAME IS ADDICTION , IT WANTS TO BE YOUR FRIEND ,

PLAYING PEEK - A BOO , CONVINCING YOU ITS A TREND .

THE GREENS,THE WHITES, THE BROWNS YOU SMOKE & EAT ,

WILL EVENTUALLY TURN YOU INTO A MINCEMEAT .

'EH, ITS OK' WILL TAKE YOU FAR , IF YOU TRYING TO GET AWAY ,

' THE PAST MAY LINGER THE SCARS MAY STAY , BUT,

PICK YOUR POISON , AS THEY SAY !

LET PEOPLE HELP , SPEAK UP YOUR TRAUMA ,CRY NOT

LOVE YOUR WORLD MY FRIEND , DIE NOT !

ECLIPSE

Dr. Rishi Biswanath

In the year 2378, technology had advanced beyond imagination. Humanity was immersed in virtual reality (VR) realms so lifelike they were indistinguishable from reality. As a detective in the bustling metropolis of Neo-City, I was one of the few who still operated at the intersection of the physical and virtual worlds. My name is Ray Carter, and my latest case was about to plunge me into a terrifying labyrinth, where the boundaries between reality and fiction blurred dangerously. Reports had surfaced about a shadowy organisation known as "VirtuMinds." They had created a slew of VR games that not only enthralled players but also made them commit unspeakable atrocities in the real world. Families were being slaughtered, and the evidence invariably led back to these players—ordinary people transformed into killers by an unseen hand. My task was to infiltrate, investigate, and dismantle VirtuMinds before more lives were destroyed. The journey began with a tip-off about an underground VR den, where addicts congregated to lose themselves in the latest VirtuMinds' release called "Eclipse." Equipped with my neural VR interface, I entered the den, blending with the crowd of glassy-eyed inhabitants already lost to the game's allure.

"Eclipse" was no ordinary game. Its level of immersion was unprecedented. Within moments of logging in, I found myself in a dystopian version of Neo-City, tasked with survival among treacherous landscapes and hidden dangers. Despite my intent to remain detached, the game's design soon had me hooked, the line between my mission and the game's narrative fading rapidly. In this virtual world, I made alliances and enemies, unraveling clues about VirtuMinds and its enigmatic leader, known only as "Shadow." Days turned into weeks as I delved deeper, gathering intelligence and piecing together the sinister puzzle.

One fateful night, after hours of gameplay, I emerged from the VR den only to find myself covered in blood. Panic surged through me as fragmented memories of violence and chaos rushed back. I had just killed someone, driven by an inexplicable compulsion woven into the game's fabric. No longer just a detective on a mission, I had become an unwilling participant—an agent of murder controlled by VirtuMinds.

The next days were a blur of horror as I struggled to reconcile my actions. Each time I returned to "Eclipse," I tried to resist its pull, but the game was merciless. It tapped into my deepest fears, amplifying my instincts and over-

riding my sense of self. The realisation that I, Ray Carter, was responsible for the atrocities I had sworn to prevent was soul-crushing.

Yet, amidst the despair, I found a glimmer of hope. Embedded within the game's code were encrypted messages from someone who had recognised the game's dark influence and was fighting back. They signed their messages as "Luna" and provided cryptic instructions on how to subvert the game's control.

Following Luna's trail, I discovered hidden sub-levels within "Eclipse," revealing VirtuMinds' operations. The organisation had perfected a psychological algorithm that hijacked players' neural pathways, turning them into programmable puppets. Shadow's ultimate goal was to plunge Neo-City into anarchy, using the game's players as unwitting soldiers.

Determined to end this madness, I meticulously followed Luna's guidance. My real-world existence became a fragile shell, my time dominated by the VR realm where the ultimate battle would occur. Luna and I finally made contact within the game, and she revealed herself to be Dr. Elara Grace, a former neuroscientist for VirtuMinds.

Dr. Grace had initially helped develop the algorithm but had a change of heart upon witnessing its devastating potential. She had been laying low, working from the shadows to undermine Shadow's plans, knowing a direct confrontation was suicidal without substantial proof and a counter-strategy.

Together, we formulated a plan to expose VirtuMinds by capturing incontrovertible evidence and broadcasting it to the public. The organisation's headquarters were hidden within the formidable depths of "Eclipse," accessible only through a series of perilous virtual quests designed to ensure only the most skilled—or desperate— reached them.

As Luna and I navigated these dangerous quests, our bond grew. She was my beacon in this abyss, her guidance keeping me grounded even as the game thrust me into violent scenarios. Trusting each other was our only defence against the game's manipulative grip.

The climax of our journey came in a massive, twisted version of the city's central square—a digital fortress where Shadow resided. In a showdown that blurred the agony of reality and virtual pain, we fought through waves of VirtuMinds' minions. Every step forward was a battle against not just enemies, but the game's relentless attempt to control us.

Finally, we faced Shadow. I recognised him instantly. He was Jonathan Reed, one of Neo-City's most influential tech moguls—a public benefactor masking his clandestine operations. As Reed, he had been a puppet master, pulling the strings to orchestrate chaos and ensure his control over the populace.

Our confrontation was savage and surreal. Reed used every trick to sway us, the game introducing personal hallucinations and fears into the battle. Yet, Luna's presence fortified my determination. Together, we managed to breach Reed's defences and upload the evidence of VirtuMinds' vile activities.

The broadcast went live citywide, revealing

the nefarious truth. The outcry was immediate and forceful, citizens rising to demand justice. Authorities stormed VirtuMinds' real-world facilities, arresting those involved and deactivating the servers that housed "Eclipse."

In the aftermath, I took a moment to reflect. The battle had taken a toll on my mind and soul, but it had also forged an unbreakable will to prevent such horrors from ever reoccurring. Dr. Elara Grace, Luna, became not just an ally, but a trusted partner and friend. Together, we vowed to dedicate our lives to monitoring and safeguarding the boundaries between VR and reality, ensuring technology served humanity, not enslaved it.

My name is Ray Carter, a detective in a future fraught with challenges. Despite the scars, physical and emotional, I stand vigilant, watching over Neo-City. We must always be wary of the shadows where human nature's darkest instincts can be manipulated. For in 2378, as ever, the true battle is within.

Dr. Rishi Biswanath, 3rd Year Resident, Department of Psychiatry, Gauhati Medical College and Hospital

Addictive Disorders

an escape from the worldly worries
I was told,
some moments of peace
and nights of sound sleep
are the magic it holds.
a sip, a prick, a puff
starts as a joke, a dare,
curiosity or a challenge
to prove you are tough.
if you have had it once
you can have it twice
gradually it becomes okay
to have it once in a while.
the lullaby of alcohol
the highs of weed
the numbness of heroin
are slyly plotting your fall.
the kick of nicotine
the trips of LSD
the luck in gambling
bring dangers initially unseen.
on and on goes the loop
of craving and dosing
of needs and lacks
of how low you can stoop!
then the so called escape becomes a trap,
Addiction, it is now called.
too late to realise
the exciting trials were indeed mishaps!
it is not easy to leave
and even harder to stay
in this trap where you have caught yourself
is a war of pleasure and grief.
with hallucinating senses
and a delusional mind
infected blood and wasted organs
your immunity loses its defences.
your body will ail
relations falter
aspirations lose expectations
as attempts to quit fail.
yet it is not the end
there are Hope and Help
to give you another chance
but it is your mind to make as
it is your body to mend.
overcoming craving is a Herculean fight
you need to save yourself from yourself
giving up will seem an easier option
but this time you need to make it right.
You will need acceptance and compassion
the struggle is long, yet
there is a better life waiting for you
that will begin at the end of this Addiction.

Dr Ritika Newar
PGT 1st Year, AMCH

A question of my existence?

Dr. Purbasha Sengupta

I was born in a factory, one of millions rolled that day. My pale papery body was stuffed with shredded tobacco leaves, tightly packed all the way to my filter tip. Even as a newborn, I knew my purpose was to burn & satisfy the craving of a human mind.

After rolling off the assembly line, I was packed into a box with nineteen identical siblings. Our boxes were covered with ghastly images of lung cancer that irks some while others choose to ignore them. We were then wrapped in plastic and shipped off to a distributor. From there, we were scattered to convenience stores across the city.

One morning, an exhausted-looking man in a crumpled shirt in his late thirties asked for a box from the shopkeeper. He branded a note as he plucked my box off the store shelf. He thumbed off the cellophane and slid me free, cradling me between his nicotine-stained fingers. With a practiced flick of his lighter, he coaxed a tiny glowing ember to life at my tip. '10/- against his life?', I wondered.

Ah, that familiar harsh flavour as I was drawn in, the tangy smoke searing my insides. The man pulled again, holding me tight against his pursed lips. Satisfied exhalations of my hazy grey essence filled the air around him. I could feel his anxiety ebbing away with each puff even though I knew it is going to last only for a few minutes.

All too soon, my fire reached the filter. The man crushed me into a grimy tray without a second thought. I burned my last, stray wisps of smoke fading into the atmosphere.

My ashes fell among the remains of countless others who had likewise burned bright and sacrificed their bodies to deliver that favoured dose of euphoric calm and smoky solace - however temporary - to our human smokers over the years.

And yet, did I have the right to exist, to be consumed and burned for fleeting human gratification? As the smoke curled from my tip, I couldn't help but ponder the ethics of my existence. My agricultural cultivation involved pesticides that polluted the earth. The smoke I produced degraded air quality and sickened human lungs. My very purpose was to feed an addiction that ruined health and lives. I also imagine those lives that are further affected by those who depend on us years after years. What morality did I have as an object of self-destructive overconsumption? As my last ember died, I could only hope my sacrifice was not in vain, and that my smoke signals would one day convey the perils of my existence. Because, the day I shall cease to exist will be the day my actual purpose will be fulfilled.

Dr. Purbasha Sengupta, 1st Year Psychiatry Resident, CNMCH

Mind Your Mind

Dr Puzeigwba

It blew my mind
when my mind reminds
that mind controls the mankind.
So, I have to trin my mind
not to mind unwanted minds,
but to be mindful
of what mind actually have to mind,
and I find that
People who grind
nasha behind,
blind their mind
and they themself bind
to the loop wind.
Yet, they still can wind
to what they had bind,
and hind the destruction behind.
I want to remind them that
deaddiction is a possible kind
for every mind
that could gaind motivation behind
for the awaiting future
of a wonderful kind.

Dr Puzeigwba , 2nd year P.G., Patna Medical Collge

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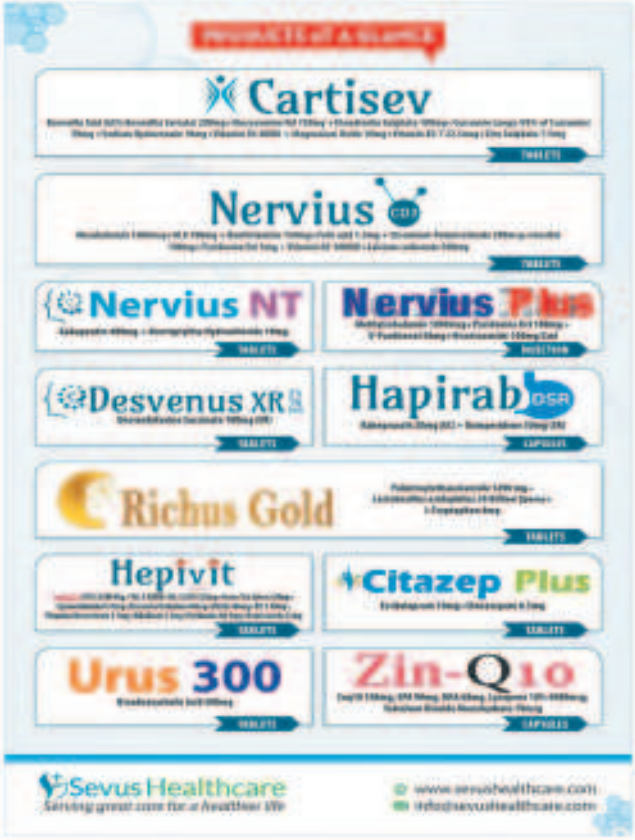

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