

Recent Advancements in Treatment and Prevention of Substance Use Disorders

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Abstract

Substance use disorder (SUD) commonly referred to as addiction. It is a medical illness with altered behavioral, cognitive, physical, neurobiological, and affective functions associated with compulsive and repeated use of addictive substance(s), whether legal or illegal. Research findings over the past two decades have substantially enhanced our knowledge of the neurobiological mechanisms and complexity of the illness caused by SUDs. As presented in the extensive reviews in this collection, we now understand that, unlike many other diseases, pharmacotherapy or behavioral/cognitive therapy alone is unlikely to be enough to either restore the damaged system(s) or to prevent relapse and sustain recovery from addiction. There are advancements in the treatment of SUD which includes the advanced thought in the care of treatment from receiving the patient to discharge the patient. It also includes community and industrial treatment policies and various awareness programs. The health care workers knowledge of treatment is highly helpful to achieve the goal in the care of patient. Creating a toll-free number for affected individuals or their families or friends to approach. Posters/pamphlets/notices to be displayed. Seeking help from the media including print, TV, and radio. Health department to be trained for referral and follow-up. Integrated Rehabilitation and Counselling Centre for Addicts sponsored by Ministry of Social Justice and Empowerment to be made accessible for persons with addiction for availing free services. Private doctors need to be sensitized. Rural camps can be conducted in partnership with appropriate treatment centers and a host organization from the community.

Keywords: Substance use, advanced treatment, deaddiction

INTRODUCTION

The term substance is used in reference to any drug, medication, or toxin that share the potential for abuse. Addiction is a physiologic and psychological dependence on alcohol or other drugs of abuse that affects the central nervous system in such a way that withdrawal symptoms are experienced when the substance is discontinued. Abuse refers to maladaptive pattern of substance use that impairs health in a broad sense.^[1]

Substance use disorder (SUD) commonly referred to as addiction. It is a medical illness with altered behavioral, cognitive, physical, neurobiological, and affective functions associated with compulsive and repeated use of addictive

substance(s), whether legal or illegal. Regardless of the differences among the addictive substances, SUDs share common neurobehavioral characteristics, including the progression of the three addiction stages and dysregulation of the neurobiological systems associated with reward, stress, emotion, and executive functions.^[2]

SUDs are important health concern worldwide. Substance use is a chronic disorder which is associated with significant mortality and morbidity. These disorders also account for significant health-care utilization and medical costs SUDs occur when a person's usage of alcohol, prescription drugs, or illegal drugs causes problems in his or her life and daily activity. Substance use disorder comprises a wide variety of behaviors that include, but are not limited to, addiction, excessive usage, and dangerous substance-induced behavior.^[3]

Diagnosis is based on criteria of behaviors that include an inability to control substance use, impairment of functioning at school, home or work, interpersonal problems caused or

Access this article online

Website: <http://innovationalpublishers.com/Journal/ijnh>

ISSN No: 2454-4906

DOI: 10.31690/ijnh.2020.v06i04.002

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exacerbated by the substance use, and risky or hazardous use of the substances. The first step in managing SUD is to stop using the substance. In extreme cases of physical addiction, detoxification is necessary to help with symptoms of withdrawal. For overcoming SUD, creating a supportive environment and eliminating triggers for substance abuse are essential. Treatment employed in the management may occur on an outpatient or inpatient basis depending on the severity of the problem. A doctor may suggest individual counseling with a psychologist, psychiatrist, or addiction counselor depending on the condition of the individual. Family counseling is often important. A doctor may also recommend special rehabilitation and/or treatment programs; self-help groups for kids and families with substance problems are often quite useful.^[4]

SIGNS AND SYMPTOMS OF SUBSTANCE ABUSE

Table 1 depicts the more common signs and symptoms of drug use. It is important to keep in mind that if a person has any of these symptoms, it does not necessarily mean that he or she is using drugs. They could be due to a mental or physical health problem. They might also be due to adolescent development (in the case of teens). Whatever the cause, they may warrant attention, especially if they persist or occur in a cluster.^[5]

ADVANCEMENTS IN TREATMENT OF SUDs

The special collection on addiction focuses on scientific advances in the treatment and recovery mechanisms of addiction related to four widely misused substances: Alcohol, nicotine, cocaine, and opioids. Although the opioid crisis has

taken center stage across public policy and scientific forums, all of these substances continue to have a profound global impact on health and well-being and on social and economic resources. This collection includes comprehensive review articles on these substances authored by leading researchers in the field of addiction, along with research studies that present recent discoveries with clear translational impact on developing new treatment targets and effective intervention strategies.^[6]

Research findings over the past two decades have substantially enhanced our knowledge on the neurobiological mechanisms and complexity of the illness caused by SUDs. As presented in the extensive reviews in this collection, we now understand that, unlike many other diseases, pharmacotherapy or behavioral/cognitive therapy alone is unlikely to be sufficient to either restore the damaged system(s) or to prevent relapse and sustain recovery from addiction. Pharmacotherapy alone may only help to reduce the severity of the disorder(s). The current evidence indicates that, to achieve effective treatments and long-term recovery from SUDs, a combination of therapeutic intervention strategies is likely required that include pharmacological treatments and evidence-based behavioral/cognitive therapies (newer therapies using brain stimulation and other non-traditional approaches are also in development).^[7]

In India, the national drug deaddiction helpline witnessed a huge spike in calls in April when the lockdown was in full swing, receiving 4996 calls, the highest for a month since January. Even the total number of calls between April 2020 and June at over 9400 was higher compared to 8208 calls

Table 1: Signs and symptoms of substance abuse

Physical signs	Behavioral signs
<ul style="list-style-type: none"> • Inability to sleep, awake at unusual times, unusual laziness • Loss of or increased in appetite, changes in eating habits • Cold, sweaty palms; shaking hands. • Red, watery eyes; pupils larger or smaller than usual • Unusual smells on breath, body, or clothes • Extreme hyperactivity; excessive talkativeness • Slowed or staggering walk; poor physical coordination • Needle marks on lower arm, leg or bottom of feet • Nausea, vomiting, or excessive sweating • Tremors or shakes of hands, feet, or head • Irregular heartbeat • Runny nose; hacking cough • Puffy face, blushing, or paleness • Frequent rubbing of the nose • Frequent twisting of the jaw, back and forth • Deterioration of hygiene or physical health 	<ul style="list-style-type: none"> • Change in overall attitude/personality with no other identifiable cause • Drop in grades at school or performance at work; • Skips school or is late for school • Change in activities or hobbies • Chronic dishonesty • Sudden oversensitivity, temper tantrums, or resentful behavior • Difficulty in paying attention; forgetfulness • General lack of motivation, energy, self-esteem, “I don’t care” attitude • Change in habits at home; loss of interest in family and family activities • Paranoia • Silliness or giddiness • Moodiness, irritability, or nervousness • Excessive need for privacy; unreachable • Secretive or suspicious behavior • Car accidents • Change in personal grooming habits • Possession of drug paraphernalia • Changes in friends; friends are known drug users • Unexplained need for money, stealing money or items • Possession of a false ID card • Missing prescription pills • Complaints of a sore jaw (from teeth grinding during an ecstasy high) • Presence of unusual number of spray cans in the trash

received from January 2020 to March 2020. The nature of calls varied from those dependent on drugs reporting moderate to severe withdrawal symptoms to callers reporting suicidal thoughts due to their inability to access drugs. Officials pointed out that compared to pre-COVID times, a much larger number of callers wanted to deal with the withdrawal symptoms. Officials from the Ministry of Social Justice and Empowerment (MSJ&E) explained that the helpline staff not only provided telephonic counseling but also linked the callers to deaddiction centers and treatment facilities to help them kick the habit. To step up the battle against drug use and alcoholism, the government in 2020–2021 will be focusing on building treatment and deaddiction facilities in 272 districts identified as vulnerable based on prevalence of substance abuse and access to drugs. Going by the findings of the “Magnitude of Substance Abuse in India” report 2019, among drug users, 72 lakh required treatment for cannabis, 60 lakh for opioids, and 11 lakhs for sedatives.^[8]

CONTINUUM OF CARE

Treatment for addiction should include a full continuum of care. This approach allows experts to guide clients through various levels of care, depending on their needs. Treatment may start with intensive inpatient treatment and detox before transitioning clients to outpatient treatment and aftercare support. In general, a rehab center screens clients to determine where they should begin their journey to recovery. Once that determination is made, a client can be admitted. It is essential that you choose a rehab center that offers a continuum of care and uses evidence-based treatment. This means that the course of treatment used in the center is based on scientific research and study. Research has proven that a combination of medication-assisted treatment and cognitive behavioral therapy is most effective when treating individuals with addiction.^[9]

ADVANCED RECOVERY SYSTEM (ARS)

What sets ARS recovery programs apart from most conventional rehab programs? The client-centered treatment plans are truly tailored to each client. Treatment planning is a crucial step in the recovery process. At the admission stage, clients undergo thorough, comprehensive neuropsychological evaluation to identify their physical, emotional, and psychosocial needs. The health-care systems use the information gathered in this assessment to develop an approach to treatment that reflects the individual’s medical, psychological, and psychosocial status. To gauge the effectiveness of treatment, they regularly review and reevaluate the client’s progress. As part of treatment planning, the multidisciplinary staff identifies the appropriate level of care for the client and decides which therapies will create the best outcomes. Whether the client requires help for alcohol abuse, drug addiction, an eating disorder, or a cooccurring mental illness, they are fully equipped to provide a personalized plan for recovery. Residential treatment is one of the cornerstones of care in the ARS network of facilities. The beautifully appointed residential recovery facilities create the

ideal environment for healing, with luxury accommodations, a full range of therapeutic services, and a dedicated staff. Clients who are ready for a lower level of structure and supervision may be appropriate for a partial hospitalization program.^[10]

PREVENTION OF SUDs

Prevention in the community and at the workplace is a vital component in SUD treatment and management. Mobilizing the community, creating awareness that addiction to substances is a disease that it is treatable and that treatment is available are all essential. A cost-effective prevention and treatment approach play a major role in creating drug-free communities. Workplace prevention policies to prevent and manage SUDs lead to safer work environments, better motivated teams of workers, and a productive workforce.^[11]

Early prevention intervention in the community

Preventing the growth of this problem in communities calls for a multipronged approach and must address the various stages of the life cycle of the population and various segments of the community. School-based awareness programs for children to impart the messages to them at an early age so that they can make healthy choices in life when they grow up. School-based interventions on the awareness of harm from substance use have been carried out sporadically in India. The project MYTRI showed that health promotion among adolescents was beneficial in preventing tobacco use. Youth groups in the community, women self-help groups, political leaders, and religious heads from the community are major sources in the prevention of substance abuse.^[12]

Populations who should receive early intervention

Early intervention should be provided to both adolescents and adults who are at risk of or show signs of substance misuse or a mild SUD. One group typically in need of early intervention is people who binge drink: People who have consumed at least 5 (for men) or 4 (for women) drinks on a single occasion at least once in the past 30 days. Recent national survey data suggest that over 66 million individuals aged 12 or older can be classified as binge drinkers. Of particular concern are the 1.4 million binge drinkers aged 12–17 years, who may be at higher risk for future SUDs because of their young age.^[13]

Other groups who are likely to benefit from early intervention are people who use substances while driving and women who use substances while pregnant. In 2015, an estimated 214,000 women consumed alcohol while pregnant, and an estimated 109,000 pregnant women used illicit drugs.^[14]

Components of early intervention

One structured approach to delivering early intervention to people showing signs of substance misuse and/or early signs of a SUD are through screening and brief intervention (SBI). Research has shown that several methods of SBI are effective in decreasing “at-risk” substance use and that they work for a variety of populations and in a variety of health-care settings.^[15]

Awareness

Creating a toll-free number for affected individuals or their families or friends to approach. Posters/pamphlets/notices to be displayed. Seeking help from the media including print, TV, and radio. Health department to be trained for referral and follow-up. Integrated Rehabilitation and Counselling Centre for Addicts (sponsored by MSJ&E to be made accessible for persons with addiction for availing free services. Private doctors need to be sensitized. Rural camps can be conducted in partnership with appropriate treatment centers and a host organization from the community. Websites of Government in state and district level need to display services for addiction management. Observing all important days like International day against illicit drugs and trafficking, anti-tobacco day, Gandhi Jayanti day, etc., help to increase awareness about the problem of substance abuse and addiction. Law/police departments need to be engaged to prevent legal problems associated with substance use and intervene for persons with substance use in conflict with the law. Use of social media is an increasingly powerful tool even in rural areas. This can work in both enhancing awareness on treatment and be exploited by substance using networks.^[16]

Adding referral to treatment when necessary

When an individual's substance use problem meets criteria for a SUD, and/or when brief interventions do not produce change, it may be necessary to motivate the patient to engage in specialized treatment. This is called Screening, Brief Intervention, and Referral to Treatment (SBIRT). In such cases, the care provider makes a referral for a clinical assessment followed by a clinical treatment plan developed with the individual that is tailored to meet the person's needs. Effective referral processes should incorporate strategies to motivate patients to accept the referral. Although the SBI components of SBIRT are the same as SBI, referral to treatment helps the individual access, select, and navigate barriers to SUD treatment.^[17]

CONCLUSION

Successful SUD treatment and recovery not only are dependent on the steadfast self-determination to change one's behavior patterns in individuals with SUDs (i.e., in seeking treatment and quitting substance use) but also require a concerted effort and support from specialized medical professionals, social

communities, industries, and governmental actions, in addition to scientific discoveries. It is vital to advocate for more medical professionals with specialized training in SUD treatment and to equip them with the most current scientific knowledge and clinical skills to tailor treatments based on individual differences and to apply evidence-based therapeutic tools.

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How to cite this article: Sudheesh S, Gowda SNN. Recent Advancements in Treatment and Prevention of Substance Use Disorders. *Innov J Nurs Healthc.* 2020;6(4):37-40.