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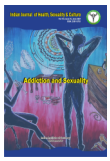

Guest Editorial

Sex, drugs, and rock 'n' roll: really?

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Sex and drugs and rock and roll
Is all my brain and body need
Sex and drugs and rock and roll
Is very good indeed
(Sex, drugs and rock 'n' roll, Ian Dury and the Blockheads, 1977)

The title of this rock music of the late 1970s became an iconic slogan of millions of young people worldwide and assumed undertones of freedom, choice, liberation, and anti-establishment counter-culture. The origin of this ubiquitous phrase can actually be traced to the 1960s' 'Hippy movement' and 'Flower Power'.

All good so far, except that regular recreational drugs and sexual health fails to especially produce the 'rock and roll', in the long run. Addictive disorders and sexual health interact with each other in various ways, and the result is not often pleasurable. This entire special issue of the journal is devoted to studying such variegated and complex interactions in several standard clinical settings. The editors and the authors are to be commended for this painstaking and valuable compilation. In this guest editorial, we seek your indulgence in making a few general observations and commenting on a few points not covered elsewhere.

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Substance use disorders and sexual dysfunctions are quite common in the population and are often closely related clinical conditions. A nationwide study in India revealed the prevalence of substance use disorder to be around 21% for tobacco, 4.6% for alcohol, and 0.6% for other illicit substances (Gururaj et al., 2016). On the other hand, the prevalence of sexual dysfunction in Indian males widely varies from 20% to 80% across studies (Rao et al., 2015; Singh et al., 2018).

The neurobiological link

The sexual response cycle consists of the phases of desire, excitement, orgasm, and resolution. Recent conceptual change challenges the linear transition from one phase to another and proposes a cyclic, interconnected model. A dynamic balance between excitatory neurotransmitters like dopamine, noradrenaline (salience, reward, and physiological changes, i.e., arousal, erection, ejaculation, etc.), and inhibitory neurotransmitters like endocannabinoids and endogenous opioids (reward, sedation, satiety) controls the sexual response. The

neurotransmitter profile of the sexual response cycle indicates a potential interaction between human sexuality and the use of psychoactive substances (Meston and Frohlich, 2000; Hallinan, 2015). Indeed, at its core, both drugs and sex compete for the basic brain reward circuitry, and this may be the conceptual basis for much of the interactions between psychoactive substances and sexual behaviour or dysfunction.

Recreational use of the substance and sexual dysfunction

Although sexual dysfunctions are common in the general population, professional help-seeking is much lower. People often self-medicate with various traditional, over-the-counter medicines, pharmaceutical sexual enhancers, and/or psychoactive substances to enhance their sexual potency. Traditionally various substances like opium and cannabis have been used as aphrodisiac and sexual-enhancing agent (Chauhan et al., 2014). This practice has assumed special significance in recent times in the age of chemically enhanced performance.

Medication for sexual dysfunction and their addictive potential

There are case reports showing abuse of phosphodiesterase-5 (PDE-5) inhibitors, especially sildenafil. The motive of abuse is its psychoactive or sexual enhancing effect. The long-term abuse of these agents can lead to various side effects (Mathur et al., 2020). Gay and bisexual males commonly co-administer PDE-5 inhibitors and various other stimulants (like cocaine, amphetamine, ketamine, etc., to enhance sexual potency and sexual experience. Prolonged administration of these agents often causes exaggerated penile vascular congestion, micro-abrasions, and an increased chance of blood-borne infection transmission (Halkitis et al., 2007).

Chemsex

Chemsex is a recently formulated shorthand term that denotes the use of certain psychoactive substances 'immediately before or during sexual activities to facilitate, prolong and/or intensify sexual experience, mainly by some communities of men who have sex with men (MSM)' (Bourne et al., 2014). Men who have sex with men and the bisexual population often engage in sexual intercourse under the influence of various new psychoactive substances like mephedrone and gamma-hydroxybutyrate or gamma-butyrolactone. The prevalence reaches up to around 20% in some populations. Chemsex leads to persistent exhaustion, insufficient food intake, dehydration due to the effect of the particular substance use. There is a high risk of transmission of blood-borne infections due to multiple unprotected sexual intercourse (McCall et al., 2015).

Substance use disorder and treatment-emergent sexual dysfunction

The nature and extent of substance-induced sexual dysfunction depend on various factors like the nature of substance, adulterants, dose, and duration of use. Tobacco, cocaine, and stimulants can impair vasodilatation, causing impaired erection and vaginal lubrication. Alcohol, opioid, cannabis may reduce testosterone by different mechanisms, leading to reduced sexual arousal. Opioids can also suppress luteinizing hormone levels (Ghadigaonkar and Murthy, 2019).

Sexual dysfunction might motivate treatment-seeking and can also be counterproductive if not adequately addressed. Often, there is a transient deterioration of sexual function during the withdrawal period (Pickworth and Fant, 1998). Some treatment modalities for substance use disorders might aggravate sexual dysfunction further. Opioid agonist

treatment with methadone is one such example (Hallinan et al., 2008). Comorbid psychiatric conditions often warrant other pharmacotherapies (like antipsychotics and antidepressants), which have unique sexual side effects. The irreversible damage caused by various psychoactive substances can also produce long-term sexual dysfunction. Sexual side effects of therapeutic agents might reduce treatment-seeking in patients with substance use disorder.

Can sexual behavior be addictive?

Sexual behavior is inherently pleasurable and has immense evolutionary implications in the maintenance of the species. At the same time, excessive sexual drive often leads to a wide range of negative physical, interpersonal and social consequences. Various repetitive behaviors like gambling are currently conceptualized as behavioral addictions, considering their phenomenological and neurobiological similarity with substance dependence. Often a corollary is drawn with hyper sexual disorder too. Some clinical and neurobiological evidence support the addictive nature of sexual behavior, but the extent of similarities is still unclear. As a result, the current diagnostic systems do not include hyper sexual disorder under the rubric of behavioral addiction (Kor et al., 2014). The ICD-11 classifies compulsive sexual behavior disorder under impulse control disorders. However, the jury is still out on this!

Conclusion

Recreational substance use, substance use disorders, and sexual health functions are often intertwined with each other in complex ways. Sexual dysfunction can be the cause, effect, and side effect of the treatment of substance use disorders. High-risk sexual behaviour is also associated with substance use and can itself be part of hyper sexual disorder. Treatment seeking for both entities is limited due to stigma. Inefficient handling of one condition can lead to early disengagement from treatment and widen the treatment gap. Both the conditions require an integrated treatment approach. A clear understanding, clear communication, and evidence-based management of such conditions are required to manage such conditions effectively.

We end by reiterating that the editors and the authors in this special issue on 'Addiction and Sexuality' are to be commended for this painstaking and valuable compilation, which is sure to benefit the practitioners of both addiction medicine and sexual medicine.

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