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Abuse of psychoactive Fauna to get a High - A review of the past & present

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ABSTRACT

Substance abuse has been and still is a major personal, social and legal problem in the world. A variety of substances have been implicated to be psychoactive and have been abused by man. History is proof that some practices or sources are very strange and dangerous also. This article presents facts of such rare, less documented and dangerous source of substance abuse. Psychoactive fauna refers to the group of animals whose body parts or excretions contain one or more substances which, in a sufficiently high dose, have the potential to alter the user's state of consciousness.

These substances have been part of ritualistic and superstitious practices in the world. Though they are quite significantly existent among us they are less realized by people not under their influence and also by law. We aim at sensitizing the community by compiling and critically analyzing the problems of this rare and fast growing problem of abuse of psychoactive fauna.

Keywords: Substance Abuse, Psychoactive Fauna, legal Problems

Introduction

Abuse of psychoactive substances by man has been evident in history right from the time of his existence. He has constantly been experimenting with newer, better, stronger sources for altering his consciousness. It is important to consider that as the origin of these practices are unknown; their actual antiquity is on an open-ended time scale.

Psychotropic plant chemicals evolved recurrently throughout evolutionary history. Archaeological records indicate the presence of psychotropic plants and drug use in ancient civilizations. Psychoactive drugs induce emotions that at one point in mammalian evolutionary history signaled increased positive attitude. In ancient environments positive emotion correlated with a sign of increased fitness, such as successful foraging sessions or successful breeding. Mammals would feel euphoric only during times where fitness levels were high, the euphoria being indicative of survival (1).

Man has successfully tried a variety of plat sources for gain of such psychoactive pleasure and positive emotions. Some of the most commonly used mind altering substances today are of plant origin. However there have been a variety of animal sources of psychoactive substances which are less known but equally potent and dangerous. Some of these practices are regaining their popularity to an alarming scale without the realization of law.

Psychoactive fauna is used to denote the group of animals whose body parts or excretions contain one or more substances which, in a sufficiently high dose, have the potential to alter the user's state of consciousness. The term psychoactive fauna comes from the Greek noun psuchè (life breath, spirit, soul, mind), the Latin adjective activus (active), and Fauna, the name of the Roman goddess of fertility. A person intentionally employing any species of psychoactive fauna for the purpose of exploring the psyche may be called a Psychonaut (2).

The nature of addiction is not solely based on free will to use, or an individual's conscious choice to use, but may have deeper influences. The nature of drug addiction is three-fold: biological, psychological, and social. Although humans may be biologically and psychologically predisposed to drug use and addiction, they may often be driven towards that state by social and cultural influences (1). Similar to the diversity of popularity of different drugs of plant origin there is a significant difference in the pattern of use of fauna all over the world. Gaining an understanding of the pattern of ancient psychotropic substance use in altering human brains will assist in assessing the causes and effects of addiction in a modern-day context.

Here in this review we have tried to compile a possible list of different animal sources of psychoactive substances in the past and present and tried to highlight the legal and social problems faced because of their abuse in the world and India.

Historic perspective

Humans have been curious with mind altering substances since the dawn of time. Some examples of animals with a known hallucinogenic potential are toads, frogs, salamanders, newts, snakes, scorpions, wasps, and fishes. The exact cause or substance responsible for the psychoactive effect of most animals is not clear. Most of these claims are driven by myths and superstitious rituals and are understood by indirect evidence. The nomadic and shamanic cultures in Siberia and the Eskimos had a lot of room for psychedelic drugs. Their rituals demanded them to be in a state of trance. The red and white Amanita mushroom was extensively used by these cultures to attain this trance. Consumption of human urine to reuse the psychedelic effects of the mushroom was quite common in these cultures as the mushroom was rare. The active ingredients of the amanita mushrooms are not metabolized by the body, and so they remain active in the urine. In fact, it was considered safe to drink the urine of one who has consumed the mushrooms than to eat the mushrooms directly. Reindeers were the sacred animals of these semi-nomadic people, as the

reindeer provided food, shelter, clothing and other necessities. Reindeer are also fond of eating the amanita mushrooms; they will seek them out, and then prance about while under their influence. It is suggested that often the urine of tripped-out reindeer would be consumed for its psychedelic effects. It was considered that the flesh of a reindeer which has consumed these mushrooms was more pleasurable by these people (3).

A lot of cultures have experimented with insects for aphrodisiac and psychedelic effects. Bees and the honey they produce have been used for its intoxicating potential. There have been famous episodes of inebriation of humans from consuming toxic honey throughout history. For example, honey produced from nectar of Rhododendron ponticum (also known as Azalea pontica) contains alkaloids that are poisonous to humans but do not harm bees (4).

Xenophon, Aristotle, Strabo, Pliny the Elder, and Columella all document the results of eating this "maddening" honey. Honey from these plants is said to have been used to poison Roman troops in the first century BC under Pompey the Great when they were attacking the Heptakometes in Turkey. The soldiers became delirious after eating the toxic honey. The Romans were easily defeated. Bee nectar collection from Datura plants in Mexico and Hungary, belladonna flowers, henbane (Hyoscamus niger) plants from Hungary, Serjania lethalis from Brazil, Gelsemium sempervirens from the American Southwest, and Coriaria arborea from New Zealand are thought to produce toxic honey. Narcotic opium honey has also been reported from honey made in areas where opium poppy cultivation is widespread. Sometimes honey used to be fermented intentionally to produce mead, a fermented alcoholic beverage made of honey, water, and yeast (called "meadhing")(4).

There are references of a special grub in Brazil, regarded as delicious food called bicho de tacuara (bamboo- worm), as it was found in the stems of bamboos when it gave flowers. When the people suffered sleeplessness they used to consume these dried worms and have ecstatic sleep. They used to have vivid dreams of forests, exotic fruits and successful hunts. Research suggests that these could be caterpillar probably belonging to the genus 'Cossus' or to the genus 'Hepiale'. This practice is however forgotten in the present and the term Bicho De Tacuara is used to refer to larva of the moth Myelobia (Morpheis) smerintha (5).

Ceremonial ingestion of ants for the purpose of obtaining "visions and other hallucinatory phenomena were reported in 1917 among the Kutanemuk Indians in Southern California. It is not at all certain that the ingestion of ants - which used to be part of various elaborate rituals - is itself responsible for mediating the ensuing hallucinations. Most studies were confounded by the simultaneous employment of techniques such as fasting, sleep deprivation, and the use of Datura or other psy-chotropic substances. It was speculated that the ants used in vision quests may have belonged to the yellow honey ant or other species of the Myr-macomecocystus genus. However these ants have not shown any presence of psychoactive substance (6).

The Humr people of Sudan are a tribe of hunters and are known for a variety of practices. A special beverage called ‘Umm Nyolokh’ with hallucinogenic properties is said to be used by these tibes. It is said to be made primarily with Giraffe Liver and Bone marrow. Exact content of the drink is not known but is believed that the hallucinogenic properties are derived from the addition of giraffe liver and bone marrow (7).

Ichthyoallyeinotoxism is a phenomenon where a person has vivid dreams, visual and auditory hallucinations, nightmares and sometimes frank delirium after consumption of a set of fish called

the Dream fish or Nightmare fish. Fishes such as Kyphosus fuseus, Kyphosus vaigiensis, Sarpa salpa, Siganus spinus,and Mul-loidichthys samoensis, many of which are indigenous to the Indian and Pacific Oceans, and/or the Mediterranean Sea cause this phenomenon. More commonly they present with accidental poisoning.There are references suggesting their use as a recreational drug during the time of the Roman Empire. These fish feed on some specific algae and planktons which are known to contain alkaloids of the indole group and concentrate them due to bio-magnification (8).

In 1995 a Slovenian weekly magazine Mladina published a very interesting and prominent article on, Salamander Brandy – Hallucinogenic Drugs Made in Slovenia. Though it is not clearly documented whether it is actually true as very few people knew about it, the author claims to have actually met people who made such brandy. Live Salamanders when put into alcohol secrete from their skin some hallucinogenic substances called salamandrin. Consumption of such liquor caused hallucinatory behavior and had some ritualistic implications in their culture (9).

Attempts to increase the pleasurable effects of alcohol have been similarly tried in other parts of the world also and with better success. Snakes have been of great importance spiritually in most cultures of the world and are subject to a variety of misconceptions. They have been known to be poisonous and also thought to be of medicinal value. In the Greek Hippocratic Corpus snake in wine, taken orally, was recommended for retained placenta; serpent grease was incorporated in a pessary for infertility and viper's broth was recommended for skin disease. Snake wine was also used for recreational purpose in south-east Asia since ages. Variations of snake wine also exist in Europe, where herbalists, woodland-dwellers and natural healers use adders and calamus roots mixed with Vodka. In Brazil snakes are steeped in cachaça or aguardente, an alcoholic beverage made from distilled sugar cane, to produce a snake wine commonly known as 'Pinga de Cobra'. In China similar wines which utilize geckos are available. They normally do not have the body of the gecko retained in the wine unlike Vietnamese and Laotian wines. In Taiwan, snake wine is brewed by soaking a whole poisonous snake in two gallons of Kaoliang wine and the vessel is buried deep underground for years(10).

Such practices have been rampant in the past and are still existent in different cultures to an extent that they have not only cause serious damage to human health but also pushed these species towards extinction.

World scenario in the present day

The choice of a particular substance of use, like the propensity of involving in substance use, is determined by a number of factors, including the personality profiles, socio-cultural milieu, availability, and accessibility of the substance, and co-morbid psychopathology. Of all the novel forms of psychoactive substance use reported, snake venom represents the potentially most lethal form. The rapidity with which this practice is picking up among young people in rave parties all over the world is alarming. Use of snake venom to get a high is rapidly becoming a substitute for opium addicts all over the world. This is probably because of its easy availability and also because of deficiency on part of the law enforcement system in realizing the dangers of this practice world over. The α-neurotoxins in snake venom result in centrally mediated opiate-independent analgesia through the nicotinic cholinergic receptors (nAChRs) and can substitute morphine and mitigate opioid withdrawal. As the role of nAChRs in rewarding or euphoric experiences associated with substance use mediated through the mesolimbic dopaminergic system is known, it seems plausible

to assume that the pleasurable experiences described by these people be mediated by the same pathway. This however needs to be confirmed by research (11).

There are reported incidents where snake wine was produced in USA by immersing baby rattlesnakes in Vodka. In a study of snake vine in four cities of Vietnam it was found that over 20 species of snake were being used. The use of snake wine by the western world has rapidly increased due to tourism and free online purchase facility of snake wine through websites like www.asiansnakewine.com (from Vietnam) and www.thailandunique.com (from Thailand). The only legal restriction of such products of abuse in these countries comes from wild life protection laws and not drug related laws. Still culture bound these laws are weak and incomplete. None of the 20 species found in the study were listed in the IUCN(International Union for Conservation of Nature and Natural Resources) Red List, seven species were listed in the Vietnam Red Data Book, of which five are regulated by CITES(Convention on International Trade in Endangered Species of Wild Fauna and Flora) (10).

Another rampant practice which is fast picking up is Toad Licking. The Colorado River toad, Bufo alvarius, also known as the Sonoran Desert toad, is psychoactive toad found in northern Mexico and the southwestern United States. Its skin and venom contain 5-MeO-DMT and Bufotenin. It is semi-aquatic and often found in streams. As natural defense, the skin of the toad secretes Bufotenin and other tryptamines. These substances produce psychoactive effects when smoked or licked. The secretions are dried and the crystals smoked for the hallucinogenic effect (12).

The dried skin of these toads is suspected to be part of an illegal Chinese aphrodisiac called ‘chan sui’. Five people have been reported dead after use of this dangerous preparation (13). The problem has escalated to an extent that Bufotenin and its related drugs have been outlawed in California in 1970. In Arizona one may legally bag up to ten toads with a fishing license but it could constitute a criminal violation if it can be shown that one is in possession of this toad with the intent to milk and smoke its venom. The toad is indigenous to California, Arizona and New Mexico. None of these states allow transportation of these toads to other state for wild life protection. In California it is unlawful to capture, collect, intentionally kill or injure, possess, purchase, propagate, sell, transport, import or export any native reptile or amphibian. Similarly in Mexico keeping B. alvarius is unlawful as it is listed under endangered species (12).

Psychoactive Fauna and India

Snakes have long been associated with a lot of myths and religious interest in various cultures. Legends speak of Chanakya having given small doses of poison to Chandragupta Maurya to make him immune to it. Similar myths and fancies exist very rampantly in India. A seemingly strange and dangerous practice is picking up among the young of our generation. Though very few cases are reported and studied the problem is significantly larger than it would appear. The use of Snake venom as means to get a high among the thrill seeking addicts is on a rise. Only 4 cases have been scientifically reported in our country though the practice is significantly more common (14).

This practice is picking up at an alarming rate among young party goers and heroin addicts in rave parties. They get access to these snakes from the nomadic tribesmen or snake charmers. Addicts regularly visit snake dens, as they are know, for a bite. A sharp tap with blunt instrument is given on snake's head. On tapping, the snakes bite on the site usually the tongue or ear lobes. This is felt

as a pricking sensation locally lasting for 10-40 seconds. The addicts claim to feel euphoric effect, lethargy, muscular paralysis and sleepiness. Most addicts prefer it for the euphoric effect which is caused (15).

Some people inject extracted snake venom to get a high. Snake venom has become a highly precious commodity in the black market as can be seen from the fact that frequent news paper articles which talk of police arresting peddlers of snake venom. Though the presence of such abuse is evident through indirect evidence, there is little legal realization regarding this in India (14).

There are few strange incidences reported in papers of use of lizard excreta in some popular brands of 'Ghutka' (a preparation of chewing tobacco) believing it to give an extra kick to the user. This how ever does not have any scientific basis (16). Some researchers have reported children in Delhi using dried lizard tails, snake oil and stings of wasps to gain a feeling of high (17).

Narcotic drug and psychotropic substance act, 1985 which is the primary law governing and regulating the illicit trade of psychotropic drugs in India does not cover this peculiar problem. The list of narcotic and psychotropic substances mentioned in the act does not include snake venom or any other psychoactive Fauna (18). All the drug peddlers arrested are to be tried under the Wild Life Protection act 1972 which primarily is to protect the animals. The police department does not have direct jurisdiction into the matter and the cases are to be handled by the forest department. Milking and sale of the Snake venom is banned without a license under the Wild Life Protection act. Import or export of products made of snakes like snake vine is prohibited in India. Few tribes in Tamil Nadu and Maharashtra are legally permitted to catch and milk these snakes for livelihood and production of anti-venom (14). This is sure to boost illicit trade as the value of venom in the drug market is very high and keeping a track of them will be a very difficult job.

Conclusion

Despite knowing that drug addiction could be extremely detrimental for any individual, it has been a part of mammalian society since ancient times. Man has continuously tried and explored newer and better sources of psychoactive substances. Though the presence of psycho active fauna is disputable nothing can disprove the present use of a few of these in a scale qualifying to be a problem in the society.

The problem is real but legal realization of its existence is lacking in most countries including India. Except for bufotenin none of the other psychoactive fauna are listed as a substance of abuse. Nothing can disclaim the alarming use of snakes and snake venom for abuse in our country. These substances are banned only under wild life protection laws in most countries. Without an effective level of personal, social and legal realization and understanding of these psychoactive fauna satisfactory control of this social evil is not possible.

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