Public Safety Substance Abuse Journal

Dear Reader,

Thank you for subscribing to the MEDTOX Journal. We hope that you find it interesting and informative. You may forward a copy on to others by clicking this box.

Send to a Colleague

If you have questions or suggestions you would like to see featured, please contact us at medtoxjournal@medtox.com.

Quick Links

New Criminal Justice Brochure

New 2011 DARS Catalog

Archived Journals

Our Website

Products

Contact Us

In This Issue

American Teenage Drug Use: Does Gambling Play a Roll?

For teenagers with substance abuse problems, parents are likely to cite a pattern of unwanted behaviors associated with their drug use. Referred to in literature as a "syndrome of problem behavior," this theory holds that as one adolescent problem behavior increases, the likelihood of the occurrence of other problems also increases. Over the course of the past 5-10 years, concern has grown about the roll that gambling may play as an adolescent problem behavior and what, if any, factor it plays in a teenager's decision to use drugs. A recently published study looked at the drug use and gambling histories of 2,274 youths aged 14-21. The participants were drawn from a representative household sample from all working telephones in the United States[1]. This instant study built on prior Canadian research of grade 7 through 13 students in Ontario. That study established a connection between problem gambling and other adolescent behavioral problems.[2] The authors in the most recent study built on the results of the Canadian work and better clarified the roll that gambling may have on drug use habits and vice versa. Prior reports documented that more serious, problem gamblers reported more weekly alcohol use. They also smoked more cigarettes and used drugs more often than those who did not gamble. For college students with gambling problems, their experiences were similar. Going a step further, college student gamblers reported more negative consequences from their drinking than did non-gamblers.

The authors of the University of Buffalo study evaluated gambling in several dimensions and evaluated the relationship of gambling with tobacco and marijuana use. They also assessed the connections of gambling to a number of conduct disorders. The results support the thesis that gambling problems are part of a larger phenomenon where substance abuse and conduct disorders are all linked. Out of the data, several salient observations and connections can be drawn. For instance, more powerful connections existed for the linkage of problem drinking with problem gambling; they also existed for the relationship of problem gambling with conduct disorder. The data from this study corroborated prior work that suggested that adolescents who started gambling early on were in for a rougher experience that those who started late. This phenomenon has also played out in the examination of adult substance abusing populations where earlier initiations into alcohol and other drug abuse foreshadowed more negative substance abuse consequences later in life. For adults, gambling is an addictive disorder that has been connected to antisocial personality disorder and problems with emotional control and impulsivity.

[1] Barnes GM, Welte JW, Hoffman JH, Tidwell MO. The co-occurrence of gambling with substance abuse and conduct disorder among youth in the United States. *Am J Addict* 2011; 20:166-173.

[2]Hardoom KK, Gupta R, Derevensky JL. Psycho-social variables associated with adolescent gambling. *Psychol Addict Behav*. 2004; 18:170-179.

More Bad News for Marijuana Users: Cannabis Use Is a Factor in the Development of Psychotic Symptoms

Marijuana is the most common drug of abuse in the world, adolescents and adults included. A recently concluded study has suggested that chronic cannabis use compounds the risk for mental disorders by exacerbating the persistence of psychotic symptoms[1]. The debate about marijuana's roll as a causative factor in psychosis is ongoing. There have been conflicting studies as to the impact that chronic marijuana use has on the development of schizophrenic-like psychotic symptoms. Up to this point, it has been unclear if cannabis is a causative factor in mental illness or whether or not early forms of psychosis can lead to self-medicating use of marijuana.

This well-constructed, 10-year study carefully examined the roll that persistent cannabis use had on a select group of over 1900 participants. Survey instruments and interviews were well constructed. Participant experiences with marijuana were diverse. Patterns of marijuana use were varied. Participants were assessed as to their frequency of marijuana use and classified as those who used marijuana daily, those who used it weekly, and those who used it less than once a month. This differentiation was necessary to assess dose response effects across a diverse marijuana using population. Prior studies reported on in this journal have established that extended use of cannabis increases the potential for the development of psychotic symptoms. This study corroborated and expanded on the results of prior studies. The data revealed that consistent use of marijuana did indeed significantly increase the incidence of psychotic symptoms. The course and severity of the symptoms were tied to the frequency of marijuana use. Age, sex, and ethnic background were independent factors in this investigation and had no bearing on the outcome.

As Journal readers know well, psychosis is a phenomenon that is widely experienced in any population. There are a variety of factors that can spur psychosis and extend the length of a given episode. Genetic factors and environmental stressors all contribute to the trajectory and duration of a psychotic experience. This study confirmed cannabis as a risk factor in psychosis. Habitual use of marijuana significantly increases the risk for a persistent psychosis.

Treatment and rehabilitation for marijuana dependency is a medical challenge. Few therapeutic agents exist with proven efficacy in the reduction of marijuana cravings. Withdrawal from marijuana can be an extended affair. But research tends to indicate that psychosis, anxiety attacks, and other marijuana related side effects in sobriety will abate over time. With the emergence of designer cannabinoids (Spice/K2) in American society, there may be a spike in cannabis abuse and a resultant eruption in psychiatric complaints related to their use.

[1]Kuepper R, Van Os J, Lieb R, Wittchen H U. Continued cannabis use and risk of incidence and persistence of psychotic symptoms: 10 year follow-up cohort study, *British Medical Journal*, March 2011; 342:d378.

Name That Drug: Historically Abused Drug Heads Off into Retirement

This month's mystery drug was a blockbuster. It was epic. It was legendary. This drug defined an era. But its careers as a prescription drug and a drug of abuse on the streets are now over. And despite its exit from the world stage of substance abuse, the threat of its return, or the emergence perhaps of another drug like it, is enough to keep many of our readers vigilant. Like many other contemporary abused drugs, this month's subject came to market as a prescription medicine. And in keeping to that script, this drug was very effective. It was widely prescribed. It was a common presence in millions of American medicine cabinets. It took form as a large, round tablet. A significant clue towards this drug's identity can be found in the precise initials and markings stamped into this drug at the factory. The pharmaceutical manufacturers of this drug became household names once the drug had been diverted to the street and used clandestinely. It was chic to be in possession of this drug. Many "hip" users smoked it. When crushed, the powder could be smoked or snorted. Licit and illicit users of the drug often found themselves addicted or dependent to this substance. Addicts were difficult to treat; relapse rates were particularly difficult to combat. The drug was also an early date rape drug. Some notorious cases involving it can be found in criminal court dockets out in Hollywood.

By now, some of our more experienced readers have probably figured this mystery drug out. For the rest of our readers, I will carry on with the rest of the story. This drug's emergence on the American drug scene occurred in the early 60s. By then, the drug had become immensely popular in Britain and in other European markets where it ultimately was abused and diverted. The IUPAC name for the drug is 2-methyl-3-O-tolyl-4 (3H)-quinazolinone. The drug, at one point in time, acquired a street nickname of "Lemmon Drops." What drove the popularity of this drug was its potential as a safe alternative to the use of barbiturates. The barbiturates were recognized as overly powerful sedatives and sleeping aids that possessed excessive risk for overdose and abuse. At about this same point in time, benzodiazepines were emerging as safer, more stable sedative hypnotic drugs. But this month's drug caught the attention and fancy of the fast growing American drug experimentation and "free-love" culture. And although the drug performed well as a sleeping aid, it never was fully embraced by the medical community. It may have been that physicians and other healthcare professionals understood the potential this drug possessed as an abusable drug.

As a sedative-hypnotic, the drug's principle effects were like alcohol. In fact, users of this drug would frequently black out and experience near amnesiac-like effects. Interestingly, this month's drug triggered experiences and effects that are not unlike Ambien (zolpidem) abuse, a modern prescription drug that is not as powerful but used in much the same way.

The most consistent (DAR & DRE) signs and symptoms of abuse with this month's drug are as follows:

- Horizontal gaze nystagmus (HGN)
- Vertical nystagmus (dose dependent)
- Lack of convergence (LOC)
- Lower pulse
- Lower systolic blood pressure
- Slow internal clock
- Normal pupil size
- Slow pupil reaction to light
- Droopy eyelids (Ptosis)

Other symptoms include slow or slurred speech and loss of balance. Users reported a lessening of inhibitions, emotional relaxation (letting go), elimination of anxiety, and a sense of social bonding. Women ascribed aphrodisiac effects to this drug. These effects could be enhanced when alcohol was mixed with this drug. Some users took to smoking the drug in hand-rolled joints that were mixed with marijuana. The marijuana of the time was not very potent, so the combined effects of the drugs were not significant. Other more intrepid users experimented with this month's drug by combining it with heroin for administration by I.V. injection. For those who preferred to "chase the dragon," the drug could be conveniently prepared with heroin and then smoked. The effects of this combination were powerful. But for most users ½ to 1 tablet was all it took to get high.

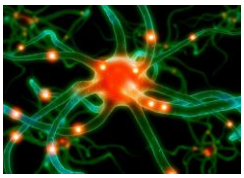
Posters, T-shirts, and bumper stickers were produced in homage of this month's drug. Even covers of record albums had references to this drug. Manufactured by Rorer and Lemmon, the drug was quickly recognized by the stamps on the single scored tablet. "Rorer-714" became the drug's trademark. "Lemmon Drops" were the name for the alternative form of the drug that was manufactured by the pharmaceutical icon, Lemmon Pharmacal. The drug slammed into Hollywood and rock n' roll cultures. It was widely abused by stars and other elites. Rumors of overdoses by rock 'n roll stars were legendary. Large numbers were forced into drug treatment programs because of abuse of this drug.

Because of the obvious potential and proven history as a drug of abuse, the drug was banned in the American market in 1982. For some years after that, the drug was manufactured in other parts of the world; a trip to parts of Europe would make acquisition of this drug rather easy. But even Europe finally eliminated the drug from its formularies. But the last, real holdout country, South Africa, finally banned the drug in 2009. In America, the drug has been added to Schedule I. It sits with drugs like heroin, cocaine, and PCP. The drug is close to being extinct in the American drug abuse scene now. From time to time, a clandestine drug lab in Mexico is identified as putting small amounts of this drug out into the drug marketplace. But in the U.S., this drug is no longer popular. From time to time, allegations are made that this drug is circulating the club scene as a chemical agent for drug-facilitated sexual assault. Those rumors never seem to pan out.

As a drug warrior of the 70s and 80s, this month's drug was a superstar. But it was a very dangerous one. It was a drug that caused much misery for those who became addicted to it and for the victims and victim's families who were harmed by it. It is with a sense of good riddance that this month's drug rides off into the sunset. Many an aging rock 'n roller will toast to that.

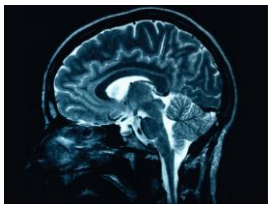
This Month's Mystery Drug: Methaqualone, also known as: Quaaludes, "ludes," "Lemmon Drops," "Lemmon Biscuits," "Mandies," "Mandrakes," "714s," and "Rorer-714s".

Potential for New Pharmaceutical Therapy to Treat Cocaine Dependence



The Italians have shed light on a new genre of medications that may be effective in treating the issues associated with treating cocaine addiction. One of the drugs proposed is *Aripiprazole,* (brand name: Abilify) a medication that is widely prescribed in the United States. The drug is approved for use in treating symptoms of bipolar disorder and schizophrenia. It appears that the drug may muffle or otherwise quiet the cravings experienced by abstinent cocaine addicts.

The Italian researchers also evaluated the effects of an unusual drug called *Ropinirole*. Under the product name of *Requip*, this drug has been approved for treating symptoms of Parkinson's disease. It is a drug that is an agonist of D_2, D_3,and D_4 dopamine receptors. As it turns out, *Aripiprazole* is a "partial" agonist of the D_2 and D_3 receptors as well. These drugs are available by prescription in the United States; they are not controlled substances.



Dopamine is the main mediator of a cocaine drug high. In recovery, cocaine craving seems to be a function of spurious dopamine receptor firing. Both of these drugs are active at these receptors. The researchers in this case report that both drugs, used individually, led to reduced cravings and more cocaine-free urine tests. Although the *Aripiprazole* was more effective than *Ropinirole* to reduce cravings, both drugs showed their potential suitability as pharmaceutical therapies for reducing craving in abstinent patients. Considering that methamphetamine's high is also mediated via *dopaminergic* transmitter systems, it might be that these drugs are useful in treating methamphetamine cravings that patients experience in abstinence.

Reports of Abuse of Common Psychiatric Medication in Prison

Reports have been circulating through the MEDTOX DAR Hotline about intranasal and intravenous abuse of the atypical antipsychotic medication *Quetiapine*. Known by the product name of Seroquel, this drug is

established as a frontline drug used to treat a variety of psychiatric diagnosis, especially those associated with serious mental illness (SMI). The drug is used to treat psychiatric conditions in a number of state prison systems. In Florida, the drug has become quite popular with inmate populations. *"Susie-Q," "Quell," and "baby heroin*" are all acquired nicknames. The drug has sedating effects that are like benzodiazepines.

Seroquel has a quieting effect on the prescribed patients. This sedating effect has increased its popularity as an abused drug. Inmate diversion and abuse has led to the drug getting yanked from a number of state formularies. But a recent report from a physician who worked in the Florida Department of Corrections suggests that the extended release (XR) for Seroquel reduces the instances of misuse of the drug[1]. It appears that the time-release format reduces the levels of the instant high that the inmates can achieve by snorting the drug. Informal interviewing of effected inmates indicated that they clearly experienced and identified the difference between immediate release forms of the drug and the extended released drug. The experiences were such that their objective assessments of the extended release drug were less complimentary than its instant release cousin. The overall impressions of these inmates was that the XR version of the drug was less prone to abuse because of issues that inmates had with trying to snort the new formula in the XR matrix.

For institutions struggling with Seroquel diversion in their inmate population, a transition to the extended release format may be a useful alternative.

[1]Reccoppa, L. *Less abuse potential with XR formulation of Quetiapine?* Am J Addiction 20:178, 2010.

Spice and K2 Products Added to Federal Register as Banned Substances

The United States Department of Justice has taken a significant step towards what might ultimately become a complete ban of current synthetic cannabinoid ingredients that make up the designer drugs *K2* and *Spice*. Although this is a temporary order, it is not unusual for these initiatives to ultimately result in permanent action and enforcement. The announcement came on March 1, 2011 and informed the public that five synthetic cannabinoids had been added to the federal Controlled Substances Act (CSA). They are now subject to temporary scheduling provisions. Those substances have been identified as the following:

- JWH-018
- JWH-073
- JWH-200
- CP47, 497
- Cannabicyclohexanol

The ruling by the DEA essentially classifies these drugs as imminent hazards to public safety, and as a result places them into Schedule I of the Controlled Substances Act. The action assigns the enforcement of these provisions to the DEA and other federal law enforcement agencies that will control the manufacture, distribution, possession, and importation of these drugs. Although these drugs are not ostensibly intended for human consumption, there has been an explosive increase in the abuse of these substances in the United States. At least 18 states now ban the use and possession of these drugs. Numerous state and county public health agencies and poison control centers have issued advisories to

the potential harm that these drugs can cause. Rehabilitation centers have seen a spike in the numbers of patients seeking treatment for addiction and dependency. Nightly news reports are peppered with reports of bad outcomes for marijuana users who have given Spice products a try.

These compounds that make up smoked herbal incense are dangerous. The effects of synthetic cannabinoids can be radically different than those effects associated with marijuana smoking. Unlike cannabis, synthetic cannabinoids have a tendency to cause stimulant-like effects that can then lead to hallucinations, paranoid delusions, and cardiac complications. Whereas cannabis overdoses are relatively rare in America, emergency medical first responders report frequent calls from Spice product users claiming to be sick, short of breath, and frightened. Reports have reached the MEDTOX DAR Hotline from law enforcement officers of DUI arrests for people under the influence of these drugs. It is evident that the products now compromise driver safety. Objective DAR and DRE symptoms of people under the influence of these products appear to be a cross between cannabis and central nervous system stimulants.

These products can be smoked in their herbal incense form with little effort. They are also available from some manufacturers as pills and/or capsules. Some dealers store large vats of JWH powder in their showrooms. Many of these drugs are imported from overseas manufacturers. Marijuana head shops and trinket stores are common sources for these drugs. The drugs are easy to find and access off of the Internet. For enforcement purposes, the DEA legislation puts these drugs into Title 21 of the United States Code (U.S.C.). State and local governments will likely craft and list their own felony statutes for enforcement by local police and drug enforcement personnel.

It is worth noting that a recent investigation by MEDTOX laboratory forensic scientists revealed that a significant percentage of Spice-spiked urine samples that were sent to our laboratories actually contained synthetic cannabinoid JWH-250, a compound that was NOT dealt with or regulated under the terms of this DEA action. It remains to be seen if Spice manufacturers move on to the production of other known, but yet to be regulated cannabinoids, all in an effort to stay one step ahead of the *G-man*.

MEDTOX®
"Quality - Service - Technology"

Thank you subscribers. We appreciate your dedicated readership. At MEDTOX we are committed to providing clients with the service and solutions you need to run successful drug testing programs. Our Journal is just one way that we show that commitment.

Sincerely,

MEDTOX Journal
MEDTOX Scientific, Inc.