

## **Existing well known and new psychoactive illicit drugs with a broad ranging hazardous potential. A detailed report on one's experiences**

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### **ABSTRACT**

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Regarding the prevalence of illicit psychoactive drugs about one third of the adults in Germany are experienced with such kind of drugs. Consumption of classical illegal drugs like heroin and cocaine seems to be unchanged. This article focuses essentially on 'natural and synthetic drugs' with respect to (i) injecting drug users (IDU) with the potential of spreading blood borne infections such as, e.g., HBV, HCV and HIV and (ii) people actively participating in sexual exposure settings where psychotropic drugs are concomitantly used. Entactogenic [1,2] drugs are also in demand in these settings especially for sexual stimulation. The

addressed issues are to highlight the complexity of the misuse of illicit psychotropic drugs in Germany, and then both targeting directly the individual, temporally limited as well as permanently following hazards of health; furthermore, the indirect consequences are the increasing spread of STIs (sexually transmitted infections) that poses the next relevant issues for public health and social importance. The drugs discussed here are no longer restricted to the most-at-risk populations [3] but have been expanded to include the general population.

**Key words:** Psychoactive drugs, health impairments, social impacts, public health.

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## ESTABLISHED DRUGS

### Cannabis

In Germany Cannabis is the most prevalent illicit drug, almost one in four people aged 18 to 64 have already experienced this drug, and about 600,000 young people in particular have problems with cannabis. The use of cannabis is the major reason for both outpatient and inpatient medical care and the need for addiction treatment centers for people around the age of about 25 years.

*Spice* - also termed *smoke* or *genie sense* - has gained increasing importance. It gets dealt as a compound of herbs, but also contains synthetic cannabinoids (cannabicyclohexal, JWH- 018 and similar kinds of chemical substances) as well as dried plant products. In view of the outpatient care service for this addiction, it is important to mention that the additional chemical compounds contained in *spice* can be four times more effective than THC (Tetrahydrocannabinol) which is the natural active agent of the cannabis plant.

The resulting adverse effects are hallucinations and confusion.

### Heroin

Heroin is a semi-synthetic product derived from morphine which is extracted from opium. According to estimates of the annual Drug Report of the German Government [4], the consumption of heroin is declining. However, overdosing of heroin is still the main reason for drug-based deaths.

The information on the declining use of heroin should be carefully considered; in the USA it looks quite different [5]. Heroin is a cheap drug and it is highly coveted by users who like its effects.

Heroin induces a feeling of concealment and protection. It helps to handle personal conflicts.

### *Risks and hazards to health owing to heroin consumption*

In contrast to alcohol heroin itself causes no long-lasting adverse effects on the body's organs including the brain. This is why the controlled administration of diamorphine for the treatment of heroin addicts has turned out to be a helpful possibility for an individual's withdrawal. As consuming heroin is mostly connected with injection, a successful withdrawal would in turn support curbing the spread of blood-borne infections, e.g., HBV, HCV and HIV that happen via sharing contaminated paraphernalia such as needles and syringes. The most serious adverse effects which result from overdosing may cause respiratory depression and can be followed by cardiorespiratory arrest.

## NEW PSYCHOACTIVE SYNTHETIC DRUGS

### Amphetamine

This drug gets dealt mostly as a powder, or more rarely as tablets (*speed* or *pep* (p)).

### Amphetamine-Derivatives: Methamphetamines

„Crystal meth“, [6,7] its short term in the drug scene is *Tina*, is dealt as a powder or as a crystalline substance. At present it is thought to be the most frequently produced synthetic drug at the global level. It is available at illegal market places as tablets or capsules named *ecstasy* which is a collective term for different derivatives of this kind. However, commonly it is offered with mixtures of different agents.

The best-known derivative is MDMA (3,4-Methylendioxyamphetamin) is also labeled as *ecstasy*. Analyses of *ecstasy* named products revealed further chemically related substances such as MDE (3,4-Methylendioxy-N-ethylamphetamin), MDA (3,4-Methylendioxyamphetamin), MDEA (3,4-Methylendioxyethylamphetamin) or MBDB (3,4-Methylendioxy-alpha-ethyl-N-Methylphenethylamin) Additionally, quite different psychoactive substances like caffeine, ephedrine or ketamine have been identified.

Scene names are, e.g., *XTC*, *Adam* (for MDMA), *Eve* (MDEA), and others depending on the label. PMA/PMMA (Paramethoxyamphetamin), which in rare cases is contained in 'dealt products', becomes effective after two to three hours after intake/consumption and can be life threatening even with a 'normal' dosage.

In Germany the consumption of crystal meth is increasing in certain regions. Crystal meth users there make up 50% to 70% of patients asking for help in centers specialized for counselling services and treatment for drug addicts. For several years an increasing relevance has been observed for amphetamines and meth-amphetamines in these centers.

The challenges regarding crystal meth have to be seen extremely nuanced in that the consumers (i) are of a heterogeneous composition and (ii) follow different patterns of consuming meth-amphetamines. Apart from consumers solely following leisure connected consumption there are those belonging to the established drug scenes (party settings) dominated by a multiple pattern of drugs but with crystal meth as the main part. However, this drug is entering the level of different population groups of the general population, e. g., pupils, and students up to people in performance-oriented professions.

Furthermore, certain settings, e.g., pregnancies and children, require special attention

due to drugs associated symptoms such as psychoses, cognitive impairments and changes both in behavior and personality. Beyond the above-mentioned situation in particular, there are consumers suffering from additional psychic diseases, consumers in charge of their children and consumers used to practicing intravenous injection.

#### **USING PSYCHOACTIVE DRUGS: EXPECTED EFFECTS AND HARMFUL SIDE EFFECTS**

The following overview focuses on effects of drug consumption that may result in increased risky behaviour in the context of sexually guided lifestyles and impairments to health [8].

Amphetamines are known as a sympathomimetic drug stimulating the sympathetic in the brain and the spinal cord as part of the vegetative nervous system. As a result of amphetamines, the organism is brought into a stress level allowing the activation of all emergency systems necessary for inducing a readiness for the respective activities [9].

Depending on the dosage and application of amphetamines used the following effects and side effects may appear:

- Less fatigue, alertness, less need of sleep, sleep disturbances, nervousness;
- Increased ability to concentrate, tunnel vision;
- Suppression of hunger and thirst;
- Increased awareness of self-consciousness up to euphoria;
- Increased disposition towards risk guided behaviour, and reduced thresholds to behave aggressively;
- Reduced pain perception;
- Increased sexual craving.

In certain gay communities related to “sex parties”, crystal meth is used to “pump up” those involved, making them ready to engage in high risk sexual practices. Patients describe the effect of crystal meth making them relaxed and providing a feeling of sexual arousal, the libido becomes more intensive than usual.

Moreover crystal meth serves to stimulate efficiency but with the potential for aggressive behavior, influencing emotional instability and increased suicidal crises. Above all, the intravenous injection of crystal meth poses risks for inducing organic brain impairments.

Derivatives of amphetamines including meth-amphetamines (crystal meth) may pose serious hazards to induce psychoses which are often linked to ignoring reality as well as confusion. In the case of consuming drugs by injection procedures using paraphernalia contaminated with blood-borne

infectious agents, the odds of acquiring respective infections are increased - the same as outlined in the consumption of heroin.

Further effects may occur during chronic consumption of crystal meth: addiction, psychoses, and impairments of the kidneys, loss of libido, erectile dysfunction and loss of body weight.

Consumption of the derivatives of amphetamines and the newer psychoactive drugs may lead to an exaggerated opinion of oneself, and entering into high risk sexual exposure practices. Consequently, these adverse side effects cause those people to disregard any precautionary measures to avoid infections by HIV and other STIs. Both readiness and competence for a discussion on consensually negotiated safety are no longer available. Additional harmful effects owing to sustained consumption of derivatives of amphetamines in particular may negatively influence the adherence to prescribed antiretroviral therapy to treat an individual’s HIV infection. Further repercussions of these drugs might restrict the individual’s cognitive abilities, risk assessments, rendering them unable to accept criticism and to behave in a discerning way [10].

#### **NEWEST DESIGNER DRUGS “LEGAL HIGHS”**

More new psychoactive drugs are offered on the illegal drug markets and by dealers [11]: these drugs contain substances specially designed to enhance psychoactive effects by modifying the chemical structure of known or yet unknown synthetic substances. *Legal Highs* is a collective term for psychoactive products not yet recorded by the legislative power responsible for drugs of this kind. Therefore, these new products are not yet subjected officially to the BTMG [12]. The legislature can only be active retrospectively. Short names for these drugs in the scene setting are e. g., *Drone, Meow, MMCAT, Magic, Kate, Ket, Kitty*, and more.

This new generation of drugs is produced in the Asiatic area and is delivered mainly to European countries.

To present this product as a harmless one it is packaged/wrapped and sold as mixtures of herbs, bath salts, air fresheners and plant food. However, insiders know about the real content. The real drugs are not stated, therefore posing additional health risks [13,14].

The reports of UNODC present the development of new designer drugs (new psychoactive substances) in 2012 and 2013 [15,16].

## SIDE EFFECTS AND COMPLICATIONS TO HEALTH OF LEGAL HEALTH IN PARTICULAR

Vomiting, tachycardia and circulatory collapse may happen; additionally hallucinations, palsies, up to a failure of vital functions may lead to emergency situations necessitating artificial respiration or reanimation.

With a view to addiction medicine it follows that consumption might lead such people into a psychic dependency.

## THERAPEUTIC OPTIONS

### Measures to be taken concerning the issues of the new drugs

1. Enrollment into the Drug Assistance Organizations to cover counseling; extending low-threshold offers for a section responsible for amphetamines including its derivatives and new psychoactive substances;
2. Harm reduction programs: Education targeting illegal drug use, detailed information on (i) illicit drugs in use, (ii) offers for injecting drug users for needle/syringe exchange programs, in particular in detention centers / jails;
3. When counselling: careful and a nuanced explanation of the hazards connected with the consumption of crystal meth; no demonization but realistic information about it;
4. Education regarding the spread of HIV, HCV and more STIs when having risky sex and concomitant use of crystal meth and *Legal Highs*: explanation of reduced ability to take criticism and reduced cognitive power.

### Conflicts of interest

There are no conflicts of interest to declare.

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