

Health professionals need to be aware of emerging novel psychoactive substances as their use is increasing, particularly among younger people

# Managing misuse of novel psychoactive substances

## In this article...

- › Why health professionals need to be aware of novel psychoactive use
- › Psychosocial interventions for the management of novel psychoactive substance misuse
- › Implications for health professionals

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**Abstract** Solomon D et al (2014) Managing misuse of novel psychoactive substances. *Nursing Times*; 110: 22, 12-15.

Misuse of novel psychoactive substances, also known as legal highs, is growing in the UK. These substances include more than 200 psychoactive chemicals and are associated with harm to physical and mental health, but are not controlled under the Misuse of Drugs Act 1971 or regulated as a medicine.

This article reviews the evidence relating to psychosocial interventions for illegal substance misuse to identify how therapies could improve rates of abstinence and awareness in adults who are misusing novel psychoactive substances. The evidence is limited and there is a need for further research and increased awareness among health professionals and the general population of this growing problem.

Novel psychoactive substances (NPS) are emerging as a popular drug of choice among young adults. These designer drugs, also known as legal highs or party drugs, produce stimulant effects similar to those of cocaine and ecstasy. Some of the first to become available in the UK include mephedrone, benzylpiperazine (BZP), *Salvia divinorum*, synthetic cannabis (Spice and Bubble Bud) and cathinones (khat). Table 1 summarises the types of NPS.

These substances are cheap, widely available and dependence forming. It is difficult to legislate to prevent their sale and use because such a wide range is available and, if one formula is made illegal, manufacturers can alter their formulas slightly to circumvent the legislation.

They are marketed as non-medical products online and are also available on high streets, at petrol stations and through the illicit drug market (NHS Information Centre, 2011). Their popularity is increasing in Europe and they are probably imported from Asia (European Monitoring Centre for Drugs and Drug Addiction, 2013). People are attracted to the drugs because they are legal and no criminal prosecution is likely.

NPS are developed by making minor molecular changes to illegal substances thereby creating a new substance that is not covered by the Misuse of Drugs Act 1971; this process has highlighted a loophole in the system of drug regulation (Johnson et al, 2013). For example, mephedrone was classified under the act in 2010 (Advisory Council on the Misuse of Drugs, 2011) but a

## 5 key points

**1** Many legal novel psychoactive substances are misused

**2** These substances have harmful side-effects and addictive qualities

**3** The purity of these drugs varies a great deal

**4** The effectiveness of psychosocial interventions for users of novel psychoactive substances is unproven

**5** Health professionals should feel confident to ask service users about use of these substances and signpost them to specialist services



Legal highs are not tested for safety



**“Prisoners, just like everyone else, deserve good healthcare”**

Teresa Fendyke ▶ p24

**TABLE 1. EFFECTS OF NOVEL PSYCHOACTIVE SUBSTANCES**

Type of drug	Positive effects	Negative effects
<b>Stimulant legal highs</b>		
These act in similar ways to cocaine, ecstasy or amphetamines. Examples include benzyloperazine, Benzo Fury, party powder, mephedrone, TNT, legal ecstasy and legal speed	<ul style="list-style-type: none"> <li>● Raised energy levels</li> <li>● Rapid thoughts</li> <li>● Euphoria</li> </ul>	<ul style="list-style-type: none"> <li>● Paranoia</li> <li>● Anxiety</li> <li>● Confusion</li> <li>● Psychosis</li> <li>● Affect on the heart as well as the immune and nervous systems</li> </ul>
<b>Sedative or downer legal highs</b>		
These work and act in a similar way to benzodiazepines. They include V8 (ex Fast Lane – legal coke), Mello Man (opium effect), Space Trips (LSD substitute), Hi-Octane (energy pills), TNT (speed), Big Daddy (ecstasy) and Sex Intense pills (sex party pills)	<ul style="list-style-type: none"> <li>● Similarities to cannabis</li> <li>● Euphoria</li> <li>● Sedation</li> <li>● Reduced inhibitions</li> </ul>	<ul style="list-style-type: none"> <li>● Confusion, panic and dissociative effects. Can cause unconsciousness, coma and death, particularly when mixed with alcohol and/or other downer drugs</li> <li>● Anxiety is common in people misusing downers, and severe withdrawal syndrome may develop in regular or heavy drug users</li> </ul>
<b>Psychedelic or hallucinogenic legal highs</b>		
These have effects similar to those of magic mushrooms, LSD and ketamine. Examples include Space Trips, Bubble Bud, Druids Fantasy, Space Cadets and <i>Salvia divinorum</i> (Johnson et al, 2013)	<ul style="list-style-type: none"> <li>● Hallucinations</li> <li>● Feelings of euphoria, warmth and dissociation (Grewal and Punukollu, 2012)</li> </ul>	<ul style="list-style-type: none"> <li>● Confusion, anxiety and panic. Altered perceptions</li> <li>● Hallucinations leading to bad trips</li> <li>● Dissociative effects are common and users sometimes have an “out of body experience” (ACMD, 2011)</li> </ul>

Source: adapted from Frank (2013)

modified version, known as naphyrone, emerged six months after this ban. This drug has since been classified under the act.

The European Monitoring Centre for Drugs and Drug Addiction (2013) identified 73 new synthetic drugs in 2012, compared with 49 in 2011. As new drugs emerge, they are investigated for their potential dangers and whether they should be made illegal (Grewal and Punukollu, 2012).

The use of NPS appears to be increasing in the UK and deaths associated with these drugs are being recorded. In 2010-2011, 128 suspected mephedrone-associated fatalities were reported and mephedrone was identified at postmortem in 90 cases (Schifano et al, 2012).

Deaths associated with NPS are being closely monitored by the UK National Programme on Substance Abuse Deaths and these appear to decrease when a substance is made illegal (Schifano et al, 2012).

### Risks of NPS use

The use of NPS is associated with serious health risks as the drugs are not tested to ensure they are safe for human consumption. It is known that some of the substances have negative effects on the cardiovascular system, renal function and

mental health (Grewal and Punukollu, 2012), while reduced inhibitions, drowsiness, excited or paranoid states, seizures and coma are common side-effects.

It can be difficult to identify NPS users as the substances are not sold or traded as medicinal products but as legal experimental substances to people who may not consider themselves to be drug misusers (ACMD, 2011).

Using urine testing to detect misuse may not be effective due to frequent manipulation of NPS structures and the number of novel substances becoming available (Bajaj et al, 2010).

Evidence has suggested mental health problems and mephedrone abuse are closely linked (Bajaj et al, 2010) but the evidence on how to manage mephedrone psychosis is weak.

Bajaj et al (2010) suggested that health professionals, for example in GP surgeries, general hospitals and mental health/dual diagnosis services, need to be aware of the growing levels of NPS misuse so it can be identified and treated.

### Psychosocial interventions

Psychosocial interventions are best described as “psychologically based interventions that reduce drug- and

alcohol-related problems” (McHugh, 2010). Table 2 provides a summary of these interventions, which include:

- » Cognitive behavioural therapy, which is aimed at modifying cognitive processes and behaviour;
- » Contingency management, a technique that provides a system of incentives or reinforcement to encourage abstinence;
- » Motivational interviewing, a directive, service user-centred counselling therapy developed to modify behaviour.

Although substance misuse is common among people with severe mental illness there is a lack of evidence supporting the use of psychosocial interventions in this patient group (Cleary et al, 2009). There is also a lack of evidence on the effectiveness of different types of psychosocial interventions and brief interventions in the management of substance misuse itself (Klimas et al, 2012).

While research has suggested that MI provides a more focused and goal-directed tool to support drug abstinence than CBT and CM (National Institute for Health and Care Excellence, 2007), cognitive behavioural approaches, including self-monitoring, goal setting, self-control training, interpersonal skills training, relapse prevention, group work and lifestyle

TABLE 2. PSYCHOSOCIAL INTERVENTIONS AND SUBSTANCE MISUSE

Psychosocial intervention	Function	Benefits in drug treatment
<b>Contingency management</b> NICE (2007)	Provides a system of incentives or reinforcement to encourage abstinence from drugs	Dutra et al (2008) found this intervention to have the strongest effect. Drug abstinence increased using strategies such as food vouchers, money or other incentives for positive behaviour
<b>Relapse prevention</b> Perry et al (2014)	Cognitive-behavioural approach with the goal of identifying and preventing high-risk situations such as substance misuse	Evidence-based intervention effective in drug abstinence
<b>Cognitive behavioural therapy</b> McHugh (2010)	Psychotherapeutic approach that addresses dysfunctional emotions, maladaptive behaviours and cognitive processes	Highly efficient psychosocial intervention, which is useful in addressing present behaviours
<b>Motivational interviewing</b> McHugh (2010)	Style of patient-centred counselling developed to facilitate change in health-related behaviours	Standardised in most modern substance misuse settings and vital tool for recovery
<b>Dialectical behaviour therapy</b> Dutra (2008)	Combines standard cognitive-behavioural techniques for emotion regulation and reality-testing with concepts of distress tolerance, acceptance and mindful awareness	Evidence based and used in complex cases
<b>Group drug counselling</b> (Dutra, 2008)	Used in group inpatient and community settings	Proven to be highly effective therapy in drug treatment
<b>12-step facilitation</b> (Dutra, 2008)	Brief, structured and manual-driven approach to facilitating early recovery from alcohol abuse and substance misuse	Proven to be highly relevant effective therapy in drug treatment, used in group, inpatient and community settings

modification have been shown to be useful with drug offenders in the prison system (Perry et al, 2014). Relapse prevention has a positive impact in substance misuse settings, for example by strengthening problem solving and coping strategies. Other CBT strategies include psycho-education, cognitive reappraisal, skills training and behavioural strategies (McHugh, 2010).

However, while there is evidence of their benefits in addressing illicit drug use, the evidence base to recommend the use of psychosocial interventions to address NPS misuse is weak and other strategies may need to be considered in parallel, including pharmacological approaches or psychiatric interventions.

**Harm-minimisation strategies**

Comis and Noto (2012) emphasised the importance of motivation, health education and harm reduction in supporting drug abstinence in Brazil. They demonstrated that understanding personal beliefs and views of the drug user were vital in gaining awareness into the drug culture. This is illustrated in the following quote:

*“A rave is very colourful. The electronic sound is really cool. You can dance there,*

*not look at anyone and stay on your trip. It’s an amusement park of drugs. Everybody’s on drugs, but everyone’s happy, nobody’s worried about family or money problems, nobody” (Comis and Noto, 2012).*

Comis and Noto (2012) identified health problems resulting from ecstasy misuse, including depression, anxiety, erectile dysfunction and paranoia. They suggested harm reduction was important and that providing users with information on drug side-effects helped drug abstinence as well as prolong abstinence. This was achieved through leaflets and advice, and helped drug users make informed decisions. In their study, non-government organisation employees encouraged drug users to ingest water, access food and visit the chill-out room at raves. They assessed the purity of the tablets and helped people when they had “bad trips”. This qualitative study highlighted the importance of community knowledge on drugs and awareness. The researchers found the environment drug users lived in and their social networks were important in drug cessation (Comis and Noto, 2012).

NICE (2007) and the ACMD (2011) suggest that better access and availability of

sterile injecting equipment is important in reducing blood-borne viruses and drug-related deaths. There is also a need for “open-access” services, which provide harm minimisation interventions and better pathways to drug treatment.

This approach could be beneficial for NPS users and allow them access to structured and recovery-focused treatment, which in turn may improve drug abstinence (Public Health England, 2014).

**Implications for practice**

The misuse of NPS is rising, particularly among young adults. It is likely that nurses, doctors and other health professionals in all settings will have increasing contact with people who misuse the substances presenting with a range of health complications, including mental health problems.

The short-term implications for physical health – including confusion, erectile dysfunction, psychosis, depression and anxiety are established – but the long-term effects of NPS misuse are unknown.

There is limited research on the management of NPS misuse but patients should be treated in a holistic manner. Health professionals should consider prescribing a benzodiazepine for psychosis

resulting from mephedrone abuse along with conventional psychiatric support (Bajaj et al, 2010). More research is required into the effectiveness of psychosocial interventions and clinical teams need to be aware of clinical guidance on managing the NPS abuse in their local area.

It could be argued that psychosocial interventions should be used to manage NPS misuse as there is evidence that they are effective in the management of illicit drug use (NICE, 2007). However, without evidence relating to their use in addressing NPS misuse, we suggest these interventions should be used as an adjunct intervention and not as a monotherapy. This means that PSI should be used along with drug therapy, as well as family, peer and psychiatric support. In addition, NPS misusers and their families need to be advised on the health implications of this activity, including the physical, psychological and psychiatric problems associated with it.

There is an urgent need for research into interventions and methods of early detection and screening. A multi-agency approach is required across drug services, to improve awareness of harm reduction strategies and possible integration of PSI approaches.

Education is crucial to equip substance misuse nurses and other professionals working in drug misuse services to address this growing problem. They need access to guidance on emerging NPS problems.

Services require the capacity to respond early to people and to develop timely, strategic interventions to NPS misuse along with monitoring and collating data on the possible role of psychosocial interventions within treatment regimens. This evidence may prove invaluable in the reduction of harm and the global burden associated with NPS misuse. Services in Europe, the UK and the US need to test psychosocial interventions in treating NPS misuse and explore any benefits. Funding in the UK has been granted for "party drug clinics"; however, some services in the UK have struggled with staff capacity and gaining funding for such projects.

### Legislation and education

There have been changes in the law to combat the use of NPS, such as the mephedrone ban, but more action is needed to outlaw these synthetic substances (ACMD, 2011). Drug and alcohol, mental health and dual diagnosis services need to raise public awareness of the risks and the potential and serious threat of NPS and actively lobby parliament to provide legislation to ban these substances.



Legal highs: cheap, widely available dependence forming and difficult to legislate against

Drug and alcohol, mental health, primary care and dual diagnosis services need to raise public awareness of the risks and the potential threat of NPS. Methods include:

- » Raising awareness of the known effects on mental health and physical and psychological implications on the health through advice, party drug clinics, leaflets, posters, media and online;
- » Health professionals developing strategies, procedures and effective research on managing NPS use;
- » Additional teaching and training for frontline drug service health professionals on managing NPS misuse.

### Conclusion

The evidence supporting the use of psychosocial interventions in the management of NPS misuse is limited, mainly due to the difficulty in identifying NPS use, and the rapid emergence of new drugs. While these interventions have been found effective in helping people who misuse illicit drugs to achieve drug abstinence, further research is needed into their role in the management of NPS misuse.

Research indicates that NPS misuse is a growing trend in the general population, and strategies are needed to educate the population about the risks posed by these substances, to help those who are misusing them to achieve abstinence and to treat those who with health problems related to the misuse of NPS. Providers of substance misuse, dual diagnosis and mental health services need to develop such strategies as a matter of urgency. **NT**

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