Executive summary

- Legal party pills emerged in New Zealand around 2000, and have been increasingly popular in recent years.
- The two main active ingredients of the pills are benzylpiperazine (BZP) and trifluoromethylphenylpiperazine (TFMPP).
- Concern has been expressed over the detrimental affect that pills can have on the health of users.
- There are constraints on selling and supplying pills to people under 18 years of age.
- The Expert Advisory Committee on Drugs (EACD) has recommended that BZP be classified under Schedule 3, Part 1 (Class C1) of the Misuse of Drugs Act 1975.
- Hon Jim Anderton, the Associate Minister of Health, has indicated that he expects to put his recommendations on any further regulation of BZP before Cabinet no later than May 2007.

Introduction

This paper first describes legal party pills, their effects, and the pattern of use in New Zealand. The law in New Zealand and abroad regarding pills is then examined. Legal party pills are defined here as those pills that are currently restricted substances to people under 18 years and have two main active ingredients – benzylpiperazine (BZP) and trifluoromethylphenylpiperazine (TFMPP). The use of party pills has increased in recent years and there has been growing concern over the potential health effects of the pills. Hon Jim Anderton, the Associate Minister of Health, said in February 2007 that he expected to put his recommendations on any further regulation of BZP before Cabinet no later than May 2007.¹

Drug Use in New Zealand

Alcohol and tobacco are the most commonly used recreational drugs in New Zealand. Cannabis is the most widely used illicit drug and the third most widely used recreational drug. In 2004/05, 59.5 percent of all valid calls to the Drug Helpline were concerned with alcohol, a decline from 79.0 percent in 2001/02. Nearly half of all valid calls (47.1 percent) involved drugs (11.4 percent in 2001/02). There were 1,980 cannabis calls (14.9 percent), an increase from 1,010 (8.1 percent) in 2002/03 (see Table 1).

<table>
<thead>
<tr>
<th>Drug Type</th>
<th>2002/03 Total</th>
<th>2003/04 Total</th>
<th>2004/05 Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methamphetamine</td>
<td>548</td>
<td>1523</td>
<td>1489</td>
</tr>
<tr>
<td>Cannabis</td>
<td>1010</td>
<td>1861</td>
<td>1930</td>
</tr>
<tr>
<td>Opiates</td>
<td>272</td>
<td>576</td>
<td>662</td>
</tr>
<tr>
<td>Amphetamines</td>
<td>188</td>
<td>251</td>
<td>349</td>
</tr>
<tr>
<td>Benzodiazepines</td>
<td>187</td>
<td>312</td>
<td>457</td>
</tr>
<tr>
<td>Solvents/inhalants</td>
<td>119</td>
<td>273</td>
<td>358</td>
</tr>
<tr>
<td>Cocaine</td>
<td>81</td>
<td>188</td>
<td>289</td>
</tr>
<tr>
<td>Nitrous Oxide</td>
<td>-</td>
<td>-</td>
<td>69</td>
</tr>
<tr>
<td>LDPP*</td>
<td>-</td>
<td>-</td>
<td>81</td>
</tr>
</tbody>
</table>

* LDPP: Legal dance party pills


Party pills

Legal party pills emerged in New Zealand around 2000, and have been increasingly popular in recent years. The number of party pill overdose presentations to the Auckland Hospital Adult Emergency Department increased from one in 2002 (0.07 percent of total overdoses) to 21 (1.58 percent) in 2004. The main active ingredients of legal party pills are benzylpiperazine (BZP) and trifluoromethylphenylpiperazine (TFMPP), both of which are central nervous system stimulants. These substances are members of the piperazine group, which are classified as synthetic designer drugs. BZP was originally synthesised as a potential treatment for internal parasites in livestock.

Legal party pills are sold under a wide range of product names. People use them recreationally, to enhance confidence, induce feelings of wellbeing and to work for long periods of time without a break. The 2006 National Household Survey of Legal Party Pill Use (National Household Survey) found that 98.8 percent of respondents who had used pills in the previous year swallowed their pills. It has been reported that some people have started to inject pills intravenously as tolerance increases with use. The strength of BZP products has increased since their introduction, from a standard dose of 70 to 80 mg per dose to 250 mg per dose. Bags of pure BZP powder of up to 1,000 mg are now marketed in some areas.

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6 Fears party pills being injected’, *Nelson Mail*, 26 December 2006, p.3.

7 Wilkins, Girling, Sweetsur, Huckle, and Huakau, p.11.
Party pills are widely available. In 2005 it was estimated that the industry had annual sales of $24 million, and in February 2007 it was estimated that over 24 million pills had been sold since 2000. The industry has projected that an estimated 5 million “servings” will be sold in 2007. The Social Tonics Association of New Zealand (STANZ) refers to itself as representing “the major manufacturers, distributors, marketers and retailers of social tonics and related products, sometimes referred to as legal highs”. PILLS ARE ALSO EXPORTED ABROAD. Indeed, it has been reported that much of the supply of pills in Britain is imported from New Zealand. Most BZP on the New Zealand market appears to be manufactured and imported from East Asia. However, the chemical process to manufacture BZP is straightforward. It is manufactured in food supplement factories in New Zealand and there are reports of it being manufactured in kitchen labs. In Australia there have been Customs seizures of BZP ordered over the Internet and shipped from New Zealand. Pills can be purchased in a wide range of retail outlets and sold in pill, capsule, and powder form. The ease with which pills can be purchased is illustrated by the National Household Survey. Over 95 percent of those who used pills in the last year said that it was very easy or easy to obtain them. Furthermore, 45.1 percent believed that availability was increasing.

Prevalence of use

The National Household Survey found that 20.3 percent of the sample had tried legal party pills, and 15.3 percent had used the pills in the preceding 12 months. The level of lifetime use was highest among the 18-29 year old age range with 40.7 percent of 18-19 year olds and 48.8 percent of 20-24 year olds having used pills. Overall, males were more likely to have tried pills than females (24.2 percent compared to 16.9 percent). Maori were more likely than non-Maori to have tried the pills (25.7 percent to 19.4 percent). The most common age at which pills were first tried was 18 years old (12.8 percent). There was no difference in the average age at which pills were first tried between males and females. With regard to the preceding 12 months, 15.3 percent indicated that they had used pills – the highest use occurring among the 18-24 year old age group (33.9 percent). Males were more likely than females to have used the pills in the preceding 12 months (19.8 percent to 11.4 percent). It has been reported that a wide range of people are using pills. These include professionals and senior citizens using the pills to make them more alert.

Frequency and quantity of use

According to the National Household Survey, of those who used pills in the previous year slightly over 70 percent used them 1-2 times (45.6 percent) or 3-5 times (26.76 percent). Use weekly or more often was indicated by 5.7 percent. On average, males used pills on more occasions than females (16.2 times compared to 7.3 times). Public places such as music concerts, on the street, and at pubs or bars were the most common locations for those who used pills in the past 12 months.

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12 Personal correspondence with Dr Paul Gee, 19 March 2007.
The mean number of pills taken on a typical occasion was 2.6 pills with males consuming more pills on average than females on a typical occasion (2.8 compared to 2.2 pills). When asked what was the greatest number of pills taken on one occasion, 41.6 percent indicated four or more pills, 20.2 percent six or more pills, and 10.9 percent eight or more pills at a time. In the survey 17.4 percent of those who used pills in the previous year said they had binged (the use of pills continuously for 24 hours or more). Of these, 52.4 percent said they had done it only once in the last year whereas 19.4 percent indicated they had binged ten or more times. A lack of knowledge regarding manufacturers’ product instructions for the consumption of pills is apparent. Manufacturers’ product instructions commonly advise that only two pills should be taken in a single night, and first time users should be cautious and only start with one pill. In the survey 15.5 percent of users indicated that they did not know how many pills it was safe to take in one night. Of those who thought they knew how many pills it was safe to take in a night, 40.7 percent answered more than two pills.

Pill users almost always consume other drugs. The National Household Survey found that 97.2 percent of pill users had used other drugs too in the previous 12 months. The most common of these were alcohol (94.6 percent), tobacco/cigarettes (68 percent), cannabis (60.8 percent), ecstasy (21.0 percent), and amphetamines (15.9 percent). Manufacturers’ product instructions commonly advise that pills should not be taken with alcohol, other drugs, medicines or other BZP products. However, 21.2 percent of users were unaware what other substances should not be taken with pills. With regard to substances used in combination with pills, 91.1 percent indicated they used alcohol, 39.6 percent used tobacco/cigarettes, and 22.3 percent used cannabis. Other substances used included ecstasy (5.3 percent), nitrous oxide (4.5 percent), and amphetamines (1.3 percent). With regard to alcohol, 39.7 percent indicated that they drank less while using pills, 32.8 percent drank more, and 27.5 percent drank the same amount. The most common co-ingestant for party pill overdose presentations to the Auckland Hospital Adult Emergency Department from 2002 to 2004 was alcohol (69 percent) followed by ecstasy (19 percent), cannabis (7 percent), and nitrous oxide (7 percent).14

14 Lynn, Jansen, and Miles, p.6.
Of current illicit drug users 27.9 percent said that they only used pills when they could not obtain illicit drugs. Another 26.9 percent said they used pills with illegal drugs to enhance their effects or duration of their effects, and 45.2 percent said they used pills so they did not have to use illegal drugs. The Auckland City Hospital findings do not indicate any widespread substitution of ecstasy and/or amphetamine for pills.\textsuperscript{15}

**Effects**

BZP has been found to have effects similar to low potency amphetamine while TFMPP is reported to have effects similar to ecstasy.\textsuperscript{16} BZP has been found to stimulate the release of both dopamine and serotonin in the brain. TFMPP is a serotonin releasing agent and binds to serotonin receptors in the brain. It has no therapeutic applications.

The physiological effects of BZP are not felt for up to two hours after oral ingestion, and some users inject BZP intravenously to experience a faster onset of action. The slow onset of action and slow abatement of symptoms are characteristic for this drug when taken orally. There is no evidence in any robust scientific studies to date (December 2006) that show BZP has any therapeutic use in humans.\textsuperscript{17}

The Expert Advisory Committee on Drugs (EACD) refers to the pharmacological, psychoactive and toxicological profile of BZP as indicating that the risk associated with its use is lower than that of methamphetamine, and broadly similar to that of ephedrine.\textsuperscript{18} Ephedrine can cause chest pain, confusion, dizziness or fainting spells, hallucinations, numbness or tingling in hands and feet, rapid or troubled breathing, seizures, headache, anxiety, palpitations, insomnia, tremor and vomiting.\textsuperscript{19}

According to the National Household Survey, the most common self-reported physical problems experienced were poor appetite (41.1 percent) and hot/cold flushes (30.6 percent) (see Table 2). The most commonly self-reported psychological problems were trouble sleeping (50.4 percent) and loss of energy (18.4 percent) (see Table 3). The Auckland study of party pill overdose presentations found that the most common presenting complaints of the overdose group were anxiety, palpitations, nausea, and vomiting. The next most common symptom complex was a decreased level of consciousness and confusion.\textsuperscript{20} In February 2007 it was reported that the National Poisons Centre had fielded 399 help calls in the past four years relating to pills. The emergency advice calls included eight cases of children younger than six years taking them. Two children were younger than 18 months, and three younger than two years.\textsuperscript{21} In February a 23 year old man was placed on life support after suffering multiple organ failure. The man had consumed pills and alcohol while an analysis found traces of ecstasy in his body too.

\textsuperscript{15} Gee and Fountain, p.2.
\textsuperscript{16} Wilkins, Girling, Sweeters, Huckle, and Huakau, p.10.
\textsuperscript{18} Ibid., p.3. The Misuse of Drugs Amendment Act 2000 established the EACD to provide expert advice to the Minister of Health regarding drug classification issues. The EACD: conducts reviews of controlled drugs and other narcotic or psychotropic substances; recommends to the Minister of Health whether and how such substances should be classified; and increases public awareness of its work by (for instance) releasing papers, reports and recommendations. National Drug Policy New Zealand (NDP), ‘Expert Advisory Committee on Drugs’. Available from http://www.ndp.govt.nz/committees/eacd.html, accessed 30 March 2007.
\textsuperscript{20} Lynn, Jansen, and Miles, p.4.
\textsuperscript{21} ‘Alarms sound over party-pill poisonings’, Dominion Post, 1 February 2007, p.8.
Patients presented to Christchurch Hospital’s Emergency Department with BZP toxicity occurred as early as 2001 but presentations were very infrequent until 2004 when there was a major increase. In 2005, four to five patients per weekend were seen with adverse and toxic effects from these pills. During five months of data collection (1 April 2005 to 1 September 2005) by the Emergency Department 61 patients attended a total of 80 occasions with adverse effects after ingestion of party pills. Patients experienced symptoms that sometimes had persisted for up to 24 hours after ingestion. The most common symptoms were palpitations, vomiting, and agitation. Females presented with adverse effects more frequently than males. The most serious adverse effect was toxic convulsions in fifteen which led to two cases being placed on life support. The study concluded that many users were taking BZP-based pills without significant adverse effects but that BZP can cause unpredictable and serious toxicity in some individuals.

Such negative effects are likely to increase through the use of pills with other drugs. In 2004/05 there were 81 (0.6 percent) calls to the Drug Helpline concerned with legal dance party pills (see Table 1). In a draft report commissioned by the Ministry of Health, the Medical Research Institute of New Zealand said that 43 percent of the 35 people who participated in the study suffered “severe adverse events” after being given a mixture of alcohol and BZP. The trial was ended in late 2006 after researchers became concerned over adverse effects experienced by participants.

According to the EACD, there is no evidence to date (December 2006) of any deaths in New Zealand or internationally caused solely by BZP consumption. However, the EACD notes that toxic effects, especially BZP-related seizures that have been described even at relatively low doses, have the potential to lead to death. The potential to cause death is increased by the way in which BZP is frequently used with other substances such as alcohol and in high doses.

According to the EACD, some evidence suggests that BZP has the ability to create dependence. In the National Household Survey 2.2 percent of users were classified as dependent. One Nelson Police youth aid officer has indicated that some young people have committed dishonesty offences to finance their consumption of pills. However, 60.8 percent of those in the National Household Survey who had tried pills indicated that they had stopped using pills. This compared with 8.4 percent indicating that they were using ‘more’ pills, 16.0 percent using the ‘same’ level, and 14.7 percent ‘less’. Of those who indicated they had stopped taking pills, 52 percent said the reason for this was they were ‘just experimenting’ or ‘didn’t like them’, and 27.1 percent stopped because of the ‘hang-over’.

23 Ibid., pp.3-4 and 7-8; and personal correspondence with Dr Paul Gee, 19 March 2007.
25 EACD, ‘Further EACD Advice’, p.4. As is noted later, the DEA in the U.S. has deemed a case as evidence of the potential for BZP to cause death.
26 Ibid., p.4.
### Table 2. Five most common self-reported physical problems from legal party pill use, 2006

<table>
<thead>
<tr>
<th>Problem</th>
<th>Experienced (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor appetite</td>
<td>41.1</td>
</tr>
<tr>
<td>Hot/cold flushes</td>
<td>30.6</td>
</tr>
<tr>
<td>Heavy sweating</td>
<td>23.4</td>
</tr>
<tr>
<td>Stomach pains/nausea</td>
<td>22.2</td>
</tr>
<tr>
<td>Headaches</td>
<td>21.9</td>
</tr>
</tbody>
</table>

### Table 3. Five most common self-reported psychological problems from legal party pill use, 2006

<table>
<thead>
<tr>
<th>Problem</th>
<th>Experienced (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trouble sleeping</td>
<td>50.4</td>
</tr>
<tr>
<td>Loss of energy</td>
<td>18.4</td>
</tr>
<tr>
<td>Strange thoughts</td>
<td>15.6</td>
</tr>
<tr>
<td>Mood swings</td>
<td>14.8</td>
</tr>
<tr>
<td>Confusion</td>
<td>12.1</td>
</tr>
</tbody>
</table>

Source: Wilkins, Girling, Sweetsur, Huckle, and Huakau, pp.31-32.

#### New Zealand Law

In 2004, the EACD in its report on BZP recommended that an 'R18' age restriction be included in the legislation as a control measure to protect young people. The Misuse of Drugs Amendment Act 2005 added a new part to the Misuse of Drugs legislation, and also a new schedule for Restricted Substances. BZP was classified as a Restricted Substance.

Constraints on selling and supplying restricted substances to people under 18 years were established and, to ensure that a level of control on these substances was in place, other restrictions were included in the legislation: a ban on advertising in major media, and constraints on free-of-charge distribution and rewards of restricted substances.

The EACD recommendations made on 4 December 2006 were:

- That BZP be classified under Schedule 3, Part 1 (Class C1) of the Misuse of Drugs Act 1975 (MODA).
- That the classification as a Class C1 drug covers all known analogues and derivatives of benzylpiperazine and phenylpiperazine that have no therapeutic use.
- That benzylpiperazine be removed from Schedule 4 of the Misuse of Drugs Amendment Act 2005 in order that it no longer be a Restricted Substance.
- That work continue to further develop the regulatory framework and enforcement capacity that would support the Restricted Substances provisions of the Misuse of Drugs Amendment Act 2005.

A C1 classification would result in penalties of up to 8 years imprisonment for importation, manufacture or supply and up to 3 months imprisonment for possession or $500 fine, or both. Substances currently classified as Class C1 include: Cannabis fruit, plant and seed; Cocoa leaf; and Catha edulis plant ('khat').

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28 NDP, ‘Legal party pills’.
The consultation process on the possible classification of BZP and related substances closed on 23 March 2007. Hon Jim Anderton has indicated that he expects to put his recommendations on any further regulation of BZP before Cabinet no later than May 2007. The New Zealand Sports Drug Agency has banned BZP in competitive sport.

It was reported in January 2007 that party pill manufacturers had developed and stockpiled BZP alternatives in preparation for Government actions on the drug. According to drug developers the ingredients of the new pills were not regulated under current law. STANZ has opposed the banning of party pills.

International Law

BZP is banned in the United States, Japan, Australia, Denmark, and Sweden. In March 2007 the UK Medicines and Healthcare products Regulatory Agency, (the government agency responsible for ensuring that medicines and medical devices work, and are acceptably safe) warned that selling pills that contained BZP was illegal and that people "should not take these pills as there are considerable health risks". The World Anti-Doping Agency has banned BZP in competitive sport.

Case-study:
The United States

According to the Drug Enforcement Administration (DEA), the agency responsible for enforcing the controlled substances laws and regulations, youth and young adults are the main abusers of BZP. Since 2000, there have been 83 cases involving the seizure of 18,000 BZP tablets and over 600 kilograms of powder. Seizures involving the combination of BZP and other noncontrolled substances such as TFMPP included over 55,000 tablets. The illicit distribution of BZP has involved the smuggling of bulk powder through drug trafficking organisations with connections to overseas sources of supply. The bulk powder is then processed into capsule, tablet, or pill form and distributed through organised networks.

In 2002 the DEA issued a final rule to temporarily place BZP and TFMPP under Schedule I of the Controlled Substances Act (CSA), pursuant to the temporary scheduling provisions of the CSA. Schedule I means: the drug or other substance has a high potential for abuse; the drug or other substance has no currently accepted medical use in treatment in the United States; and there is a lack of accepted safety for use of the drug or other substance under medical supervision. Other Schedule I substances include heroin, lysergic acid diethylamide (LSD), and marijuana. This Schedule placement occurred after a case considered by the DEA as evidence of BZPs potential to cause death (even though no causal links were established, the substance was implicated by its presence). In this case a 23 year old woman died 68 hours after ingesting BZP and 64 hours post ingestion of ecstasy and a large volume of water. No linkage with the BZP was made and the death displayed all the characteristics of an ecstasy related death.
Suggestions for further reading / links


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