

Drug Foundation summary of recent research on ‘party pills’ containing BZP

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Introduction

This paper summarises recent research findings on BZP/party pills, and outlines the current legislative status of BZP. It is being made available to assist organisations or people wanting to make submissions on the proposal to reclassify BZP and its analogues.

Please note that these are the Drug Foundation’s working summaries, shortened and adapted from the original abstracts. Three reports (Sheridan et al; Thompson et al, and Harnett) are not yet publicly available, so the material included here is drawn from the summaries in the minutes of the November 29, 2006 meeting of the Expert Advisory Committee on Drugs (EACD), and from media coverage. A list of references for research and some recent media coverage is attached. The current government proposal and some of the research is available at <http://www.ndp.govt.nz/legalparty-pills/index.html>.

Research report summaries

Gee, P., Richardson, S., Woltersdorf, W. & Moore, G. (2005). Toxic effects of BZP-based herbal party pills in humans: prospective study in Christchurch, New Zealand. *New Zealand Medical Journal*, 118(1227).
<http://www.nzma.org.nz/journal/118-1227/1784>

The study covered only Christchurch (which has a BZP market somewhat different to much of New Zealand). Found 61 people presenting to the emergency department (ED) on 80 occasions. Mild symptoms included insomnia, anxiety, nausea, vomiting, palpitations; serious cases included 15 toxic seizures, epileptic attacks and severe respiratory and metabolic acidosis; two cases required intensive care. Some adverse reactions persisted up to 24 hours. Some seizures had happened while the user was driving. Women were more likely to present than men. People presenting had taken an average of 4.5 tablets/capsules (apparently of varied brands); 39 out of 80 had taken them with alcohol, and 10-12/80 had co-used with nitrous oxide or cannabis.

The researchers concluded BZP products “appear to have a narrow safety margin”. They suggested this might be due to “intrinsic pharmacodynamic properties”; “self-dosing variability”; and/or genetic factors, as people who had experienced seizures appeared to be those with underlying neurological problems.

Nicolson, T. (2006). Prevalence of use, epidemiology and toxicity of ‘herbal party pills’ among those presenting to the emergency department. *Emergency Medicine Australasia* 18, 180–184

1043 people presenting to Waikato ED (for *any* reason) completed a questionnaire in late 2004-early 2005. One hundred and twenty-five (11.9% of respondents) had ‘ever’ taken party pills. 30% of users were in the 14–25 year age group. Of the 125 users, 56% had taken them 2-5 two times. Eighty-three (66.4%) had been drinking alcohol when they first took party pills. Only 64% had read the product directions, and 38.4% of users had at some stage taken more pills than ‘recommended.’ Of the 106 users who had felt effects from party pills, only 63 (59% of those feeling effects, 50.4% of total users) described the effects as ‘good’. Six people (5.7% of those with effects, 4.8% of total users) had sought medical attention for effects. 59.2% of users would take herbal party pills again. The study concluded that users are at risk for toxicity because they tended not to read instructions, to take more pills than recommended and to co-ingest alcohol.

Note: This study has limited generalisability as “people going to ED for any reason” are not a representative sample of the New Zealand population as a whole. Compare the data on patterns of use and effects with Wilkins et al. and Sheridan et al.

Harnett, M.A. (2006). BZP and piperazine-based party drugs. A retrospective case series of 73 poisonings with “legal highs”. Dunedin: New Zealand National Poisons Centre. *Note: This study is not yet publicly available*

This paper was presented to the EACD, based on the preliminary results of retrospective research into selected cases nationwide. The researchers concluded that BZP toxicity “is not necessarily dependent on dose and therefore severe side effects may emerge after consumption of relatively small doses of BZP”. (EACD minutes 26.11.06). The EACD noted that this study was only based on a small dataset, and more research would be needed to establish the ‘toxicity profile’ of BZP.

Nicolson, T. (2006). Prevalence of use, epidemiology and toxicity of ‘herbal party pills’ among those presenting to the emergency department. *Emergency Medicine Australasia* 18, 180–184

1043 people presenting to Waikato ED (for *any* reason) completed a questionnaire in late 2004-early 2005. One hundred and twenty-five (11.9% of respondents) had ‘ever’ taken party pills. 30% of users were in the 14–25 year age group. Of the 125 users, 56% had taken them 2-5 times. Eighty-three (66.4%) had been drinking alcohol when they first took party pills. Only 64% had read the product directions, and 38.4% of users had at some stage taken more pills than ‘recommended.’ Of the 106 users who had felt effects from party pills, only 63 (59% of those feeling effects, 50.4% of total users) described the effects as ‘good’. Six people (5.7% of those with effects, 4.8% of total users) had sought medical attention for effects. 59.2% of users would take herbal party pills again. The study concluded that users are at risk for toxicity because they tended not to read instructions, to take more pills than recommended and to co-ingest alcohol. *Note: This study has limited generalisability as “people going to ED for any reason” are not a representative sample of the population as a whole. Compare the data on patterns of use and effects with Wilkins et al. and Sheridan et al.*

Sheridan, J., & Butler, R. (2006) Legal party pills and their use by young people: a qualitative study. Final report of findings. University of Auckland, Auckland. *Note: This study is only available by contacting the lead researcher*

First qualitative research of party pills, using groups of 16-24 year-olds, complemented with information from adult key informants. Using party pills was mainly a social, shared activity. Most knew about negative effects of party pills, and many had experienced them, (especially when effects wear off) eg raised heart rate, inability to sleep, upset stomach.

Users had varying levels of knowledge about what was in party pills, and about safe use. They commonly mixed party pills and alcohol, and with other drugs. However, no-one in the study had accessed health services for effects.

Of those who had cut down or stopped using, none had found any difficulty. Similarly, treatment services workers reported few, if any, issues with young people and party pills.

Wilkins, C., Girling, M., Sweetsur, P., Huckle, T., & Huakau, J. (2006) Legal party pill use in New Zealand: Prevalence of use, availability, health harms and ‘gateway effects’ of benzylpiperazine (BZP) and trifluorophenylmethylpiperazine (TFMPP). Auckland: Centre for Social and Health Outcomes Research and Evaluation (SHORE), Massey University. Available at <http://www.ndp.govt.nz/legalpartypills/documents/legal-party-pill-use-nz.pdf>

This was a large-scale study aiming to “provide national population statistics on the prevalence and patterns of legal party pill use in New Zealand, and ... on the harms and problems related to the use of legal party pills...”. It used a random national household sample of 2,010 people aged 13-45 years, using CATI phone-interview methods.

Prevalence and patterns of use

20.3% of the sample had ‘ever’ tried legal party pills, and 15.3% had used them in the preceding 12 months. Highest recent use: 33.9% of 18-19 year olds and 38.0% of 20-24 year olds. Males were more likely than females to have used, and Maori were more likely to be users than non-Maori (*note: this is the first study to have done any ethnicity research*).

Underage use: One in six (16.3%) of 15-17 year olds had ever tried legal party pills, and 3.0% of 13-14 year olds had tried them.

Frequency of use: 45.6% of those who had used party pills in the previous 12 months had only used them 1-2 times; 5.7% had used weekly or more often (ie 50+ times in a year).

Means of administration: 98.8% of users ‘swallowed’ pills; only one user reported injecting.

Quantity used: Average number of pills taken on typical occasion was 2.6. When asked the greatest number of pills taken in a single occasion, four out of 10 (41.6%) users said four or more; 20.2% said six or more; and 10.9% said eight or more pills at one time.

Driving: 15.9% had completed at least ‘some’ of their driving under the influence of pills.

Poly-drug use

Use with alcohol: 32.8% of users said they drank ‘more’ alcohol when using legal party pills.

Substances used in combination: Nearly nine out of 10 (86.4%) used other substances with their party pills. 91.1% used alcohol, 39.6% tobacco and 22.3% cannabis.

Substances used to recover: 32.2% ‘usually used’ other substances to help them recover from party pill use. Most common were ‘recovery pills’ (50.2%); cannabis (28.3%), tobacco (27.5%) and alcohol (10.7%).

Other drug use: 97.2% had used other drugs in the preceding 12 months. “Legal party pill users generally had much higher levels of illicit drug use than the wider population” - eg 15.9% of party pill users had used amphetamines in the last year, compared to 3.7% of the general population in 2003.

Harms from legal party pills

The areas of life most commonly reported harmed by use were ‘energy and vitality’ (19.3%), ‘health’ (14.6%), ‘financial position’ (8.8%) and ‘outlook on life’ (6.3%).

Physical problems: ‘poor appetite’ (41.1%), ‘hot/cold flushes’ (30.6%), ‘heavy sweating’ (23.4%), ‘stomach pains/nausea’ (22.2%), ‘headaches’ (21.9%) ‘tremors and shakes’ (18.4%).

Psychological problems: ‘trouble sleeping’ (50.4%), ‘loss of energy’ (18.4%), ‘strange thoughts’ (15.6%), ‘mood swings’ (14.8%), ‘confusion’ (12.1%) and ‘irritability’ (11.4%).

Accessing health services: One in 100 (1.0%) users had visited a hospital ED and one in 250 (0.4%) users had been admitted to a hospital in relation to their party pill use in the previous 12 months. (*note - useful data to use alongside ED use studies*).

Availability and price

Availability: Three quarters of last-year users described the current availability of party pills as ‘very easy’ and a further 21.0% as ‘easy.’ 66% could get them within 20 minutes.

Price: Median dollar amount spent on per user on a ‘typical’ occasion \$40 (range \$8-\$200).

Extent of dependency

2.2% of last year party pill users were classified as dependent on party pills by scoring greater than four on the combined five questions of a Short Dependency Scale (SDS).

Gateway effects

Past legal party pill use and illicit drug use: Of those who indicated past relationships between their legal party pill and illicit drug use, 13.5% ‘started out using legal party pills but now mostly use illegal drugs’. 42.5% ‘now use both illegal drugs and legal party pills (no change in level of illegal drug use) and 4.1% ‘were using illicit drugs but now mostly use legal party pills’.

BZP as substitute: Of current legal pill and illicit drug users, 27.9% only ‘use legal party pills when they cannot get illicit drugs’; 26.9% ‘use legal party pills with illegal drugs to enhance their effects or the duration of effects’, and the remaining 45.2% ‘use legal party pills so they do not have to use illegal drugs’.

Policy and legal party pills

Age identification: 26.7% of pill buyers under 20 years old had ‘never’ been asked for age identification when attempting to purchase legal party pills. 80.7% of pill buyers under 20 had ‘never’ been refused purchase.

Knowledge of product safety instructions: 15.5% of users did not know how many party pills it was safe to take in a single night; one in five did not know what other substances should not be taken with pills, and 10% did not know which groups of people should not use party pills.

Perceptions of the risks of drug use: Legal party pill users considered the use of alcohol, cannabis and legal party pills to pose roughly the same level of risk, with less than 10% of users considering regular use of these substances to be an ‘extreme health risk’. By contrast, nearly three-quarters of users thought regular use of methamphetamine was an ‘extreme health risk’, and 63.8% considered regular use of GHB to be an ‘extreme health risk’.

Current regulation: 60.6% of survey respondents (not just users) felt that the current regulation of party pills was ‘too light’. One-third said current regulation was ‘about right’; and 3.1% of respondents believed that the current regulation of legal party pills was ‘too heavy’.

Support for options to strengthen regulation: Of those who believed the current regulation of legal party pills should be strengthened, six out of 10 wanted to see the sale of party pills ‘prohibited from convenience stores’, about half wanted sellers of party pills to have to obtain a special license. A further half of respondents wanted ‘mandatory health warnings on all packaging’ and ‘age restrictions on purchasing to be increased to 20 years old’. A similar proportion wanted legal party pills ‘prohibited for everyone’.

Advertising: Around one-third indicated support for ‘a total ban on advertising’, ‘prohibition from places that sold alcohol’ and ‘restricting the total dosage of BZP sold in a single pack’.

Theron, L., Jansen, K., & Miles, J. (2007). Benzylpiperazine-based party pills’ impact on the Auckland City Hospital Emergency Department Overdose Database (2002–2004) compared with ecstasy (MDMA or methylenedioxymethamphetamine), gamma hydroxybutyrate (GHB), amphetamines, cocaine, and alcohol. *NZMJ* 120(1249). <http://www.nzma.org.nz/journal/120-1249/2416/>

This study analysed Auckland ED overdose data from 2002–2004 for ‘herbal ingestions’ and ‘party pills’, plus ecstasy, methamphetamine, GHB, cocaine, and alcohol. It also examined adverse effects attributed to party pills. Most patients presented with “multidrug ingestions”, and symptoms of anxiety, palpitations, nausea, and vomiting. Almost all patients were discharged home after “reassurance, IV fluids, and diazepam,” and only one person was admitted. In 81% of cases, alcohol or another drug (ecstasy, methamphetamine, nitrous oxide or cannabis) had also been taken.

Of note was the contrast between the 21 party pill overdoses in 2004 (1.58% of overdose admissions) compared to 809 for alcohol (60.87% of all overdose admissions).

The latest study data are now over two years old, and if the overdose trend shown has continued (as is likely with increased party pill use) the 2006 figures would be considerably higher. However, having reviewed the trends, the authors concluded that “With a consumption of 200,000 tablets/month, a presentation of 21 patients to the emergency department in a year is relatively small”.

Thompson, I. et al. (2006). The benzylpiperazine (BZP)/trifluoromethylphenylpiperazine (TFMPP) and alcohol safety study. Wellington: Medical Research Institute of New Zealand. *Note: the final version of this study is not yet available*

This was a randomised double-blind placebo-controlled trial of a small group of volunteers (all previously users of party pills) to assess the physiological effects of a BZP/TFMPP product (alone and in combination with alcohol) in a controlled environment.

None of the placebo subjects experienced severe adverse effects, nor did those taking alcohol alone. However, 41% of those using BZP/TFMPP and those using both pills and alcohol had some adverse effects. Party pills, whether used alone or with alcohol, markedly increased blood pressure and heart rate. The trial was stopped with only 35 of the subjects studied, due to the level and severity of adverse effects.

While it is already recognised that the effects of BZP and TFMPP take time to act (so that users may get impatient and take more pills), the EACD noted this study also found that BZP takes some time to clear from the body. About a fifth of subjects showed tolerance or withdrawal symptoms, supporting other indications that BZP/TFMPP may have some dependence potential. However, EACD noted that this study population also showed high rates of alcohol dependence, so it may not be representative of general users. (EACD meeting minutes 29/11/06).

Notes on key findings of research so far

Clear patterns of ‘adverse effects’ are starting to emerge from the research: seizures; dystonia (uncontrollable twitching or repetitive movement); inability to sleep; and nausea/vomiting. Across the population-based research and the clinical trial, adverse effects appear reasonably common, but generally mild and short-lasting. There remain a number of research gaps. Most obvious is the inability to produce any findings on long-term effects, as the products have only been on the market for a few years.

So far there is no apparent relationship between dosage of pills and effects - some people had severe reactions after a few, many people took large doses (well over the industry’s ‘recommended limits’) without any problems. The inability to predict effects could make safe regulation difficult. However, it’s difficult to tell how reliable this is, given that different BZP/TFMPP products have very different amounts of the substances in different combinations, and user recollections may not be accurate. Some studies were not able to separate out party pill-only cases vs pill+alcohol cases and pill+other drugs.

While there has been anecdotal media coverage about people injecting BZP, the Massey study showed only one person who had used party pills recently had injected the drug, and none of those in University of Auckland had tried injection.

Most studies have found the majority of users were using alcohol with party pills, despite advice and packaging information. Many were taking party pills before driving.

There are differences in current findings about dependence/abuse potential: Wilkins et al found 2.2% had some dependence; Thompson et al indicated around a fifth of participants (all previous BZP users) had some level of dependence. Sheridan et al found no-one reporting problems in cutting down their use of party pills.

Knowledge about the products they were taking or how to use them “safely” varied. Users appeared to get information on how to use party pills from other users such as friends.

Of note when considering regulatory options is ease of access, especially for younger users. In the Massey study 26.7% of users under 20 had ‘never’ been asked for age ID when attempting to buy pills, 80.7% of those under the age of 20 had ‘never’ been refused when buying party pills. Most users could get pills within 20 minutes.

Current legal status of BZP

In 2004, the Expert Advisory Committee on Drugs (EACD) was asked to review existing evidence on the safety and legal status of BZP. Their report found almost no research on the health effects of BZP. At that time, BZP and TFMPP appeared to have low harm potential. The EACD advised on the basis of what was known that while there were risks, they appeared low enough to permit the restricted sales of these products. The EACD also called for research to be carried out in New Zealand, and several of the projects reported above were funded as a result of this recommendation.

Following the Parliamentary process, including submissions, the Misuse of Drugs Amendment Act was passed in June 2005. It can be found at <http://rangi.knowledge-basket.co.nz/gpacts/public/text/2005/an/081.html>. It created an additional class of drugs, Schedule Four, commonly known as “Class D”. The legislation restricted sales to those over 18 (S36). Section 43 banned most conventional advertising (billboards, posters, TV and radio). Section 55 provided for enforcement officers to be appointed. The Act also provided for regulations on where restricted drugs could be sold, and the dosage, packaging and marketing of products.

Regulations have not yet been passed, and to the best of our knowledge no enforcement officers have been appointed, so no formal monitoring or enforcement of the industry has been carried out. There is no licence or training required before selling the product, and because of this many dairies, off-licences and garages are currently selling them (an area of major concern to the public and health sector workers). Many outlets also display extensive point-of-sale advertising.

In November 2006, the EACD met to review the research commissioned on BZP/party pills, as well as research carried out independently. Following their review, the EACD wrote to the Associate Minister, recommending the reclassification of BZP and analogues.

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