International Journal of Drug Policy 51 (2018) 36–41

Contents lists available at ScienceDirect

International Journal of Drug Policy

journal homepage: www.elsevier.com/locate/drugpo

Commentary

Nine reasons why ecstasy is not quite what it used to be

Jane Mounteney*, Paul Griffiths, Alessandra Bo, Andrew Cunningham, Joao Matias, Alessandro Pirona

European Monitoring Centre for Drugs and Drug Addiction (EMCDDA), Praça Europa 1, Cais do Sodré, 1249-289 Lisbon, Portugal[1]

ARTICLE INFO

Article history:
Received 27 March 2017
Received in revised form 4 September 2017
Accepted 26 September 2017
Available online xxx

Keywords:
MDMA
Ecstasy
Market
Europe
EMCDDA

ABSTRACT

This paper explores the recent resurgence in use of ecstasy/MDMA in Europe and highlights keys areas of continuity and divergence between the ecstasy market of the 1990s and the current MDMA market. Based on a scoping study involving a targeted multi-source data collection exercise on MDMA, it highlights nine areas that have undergone some level of change, linked with both supply and demand for the drug. Factors discussed include: innovation in production techniques; changes in precursor chemical availability; the role of online markets; competition with other stimulants and new psychoactive substances; the increased availability of high-strength MDMA; and the shift from subcultural towards more mainstream use of the drug. The paper proposes that the MDMA on Europe's contemporary market is in some respects a third generation product with a different consumer profile, with implications that responses developed at the time of the drug's earlier iteration, may be in need of a review and revamp.

MDMA in Europe

In this paper we focus on the recent re-emergence of MDMA on Europe's drug market, and explore the continuity and important changes evident when considered alongside the historical peak of ecstasy use in the late 1980s and 1990s. Taken together, recent developments appear to be more generally illustrative of ways in which the modern illicit drug market has evolved, including continuities alongside some significant changes in manufacture, marketing to demand and consumption patterns.

MDMA (3,4-methylenedioxymethamphetamine) in the form of ecstasy tablets first came to public and scientific attention at the end of the 1980s although the drug had been used prior to this whilst going largely unobserved (EMCDDA, 2016a). The drug was socially and culturally linked with emergence of electronic music genres and large, often clandestine, dance events or parties. Ecstasy remained popular throughout the 90 s and early years of the millennium before reduced MDMA availability and an associated decline in the MDMA content of ecstasy tablets, saw a reduction in availability and use. During the first decade of the twenty-first century the content of tablets sold and consumed as ecstasy varied considerably and forensic analyses indicated that in Europe, MDMA was increasingly replaced by new psychoactive substances such as mCPP and later mephedrone (EMCDDA, 2016b).

Since around 2010 there has been a gradual upswing in the availability of MDMA products on the global drug market, a phenomenon documented in Europe, Australia and the United States among others (EDRS, 2016; UNODC, 2016). In Europe recent prevalence of use estimates of the drug indicate a return to levels approaching those documented in the early 2000s (EMCDDA, 2016c).

Concerns regarding increasing problems associated with use of MDMA, alongside law enforcement intelligence suggesting market changes in the production and supply of the drug, prompted wider investigation of the phenomenon by the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA), in order to map the magnitude of the problem and to inform policy responses. For this purpose, a scoping study involving a targeted multi-source data collection exercise on MDMA was undertaken during 2015, culminating in a 'synthesis' meeting in Lisbon in October of that year.

The study design incorporated a range of investigative approaches and data collection from multiple sources. This included a review of the international literature and available European monitoring data (general population, school and

* Corresponding author.
E-mail address: Jane.Mounteney@emcdda.europa.eu (J. Mounteney).
[1] www.emcdda.europa.eu

https://doi.org/10.1016/j.drugpo.2017.09.016
0955-3959/

targeted surveys; seizure, price and purity data; wastewater monitoring data; pill testing reports; hospital emergency cases; drug-related deaths and reports to the EU Early Warning System). In addition an online survey was undertaken with representatives from 30 European countries reporting to the EMCDDA, and with experts working in the area. Supplementary qualitative input was gathered via structured working groups and expert presentations, which allowed the incorporation of expert opinion and law enforcement intelligence. Analysis was based on triangulation of these data sources, with a view to providing as complete and verified a picture as possible.

This approach is designed to critically explore the available information on emerging threats or developments. It is taken that the information will be partial and incomplete. Whilst proving timely and valuable insights, the approach has obvious weaknesses, based on the incompleteness on the information available. Therefore, interesting hypotheses can be generated for follow up research and a useful purpose is served by auditing the information available on the situation, but caution must be exercised in over-inferring from the data available. More details of the methodology can be found elsewhere (EMCDDA, 2012; Griffiths, Mounteney, & Laniel, 2012; Mounteney, Giraudon, Denissov, & Griffiths, 2015).

Innovation in precursors, pre-precursors and routes of synthesis

One of the most striking changes between the 1990s and present day MDMA market is linked to availability of precursors. Traditionally, MDMA precursors such as safrole (3,4-methylenedioxyallybenzene, a liquid extracted from sassafras plants) and PMK (piperonyl methyl ketone, itself derived from safrole) have been imported from Asia to production sites in Europe (EMCDDA, 2013). Indeed, a shortage of safrole from 2008 onwards has been associated with the development of new alternative substances, in particular the synthetic pre-precursor PMK-glycidate which became available in China around 2010 and is more reliably available than safrole or PMK. PMK-glycidate and other glycidic acid derivatives, have been linked with revitalising MDMA production in recent years. It appears that a significant proportion of European MDMA is nowadays produced from PMK, probably made from a PMK-glycidate pre-precursor (EMCDDA, 2013).

To date, trade in glycidic derivatives of PMK remains legal, which makes it difficult for law enforcement intervention. Nevertheless some seizures of PMK-glycidate are documented, typically en route from China to Europe via the ports of Rotterdam and Antwerp for MDMA production (UNODC, 2012). For example, in 2013 a total of 2077 kg of PMK-glycidate was confiscated in Europe while in June 2014 one tonne of the pre-precursor (enough to make seven million ecstasy tablets), was seized in Barcelona on a shipment from Shanghai bound for Maastricht in the Netherlands (EMCDDA, 2016a).

Industrial scale and flexible production processes

A small number of organised crime groups have historically been linked to the production of MDMA in Europe, with facilities primarily based in the Netherlands and Belgium (EMCDDA, 2016b). The predominant synthesis technique used is reductive amination. A number of new developments appear to be specifically linked with the increased production of high-quality MDMA products. These include reports of more sophisticated and industrial-scale MDMA labs and increasing production expertise. For example, Dutch labs appear to be producing higher purity products than elsewhere, which may be linked to the skills of the illicit chemists (cooks) involved.

Compartmentalisation of the production process aimed at reducing vulnerability to law enforcement threats represents a new development, and it has become increasingly common for individual sites to specialise in a single stage of the manufacturing process (pre-precursor conversion, MDMA oil synthesis, crystallization or tableting) (EMCDDA, 2016b).

The use of specialised equipment has facilitated a rise in production volumes and in some MDMA production sites custom-built reaction vessels have been found with a capacity of up to 750 L. Law enforcement sources report other recent developments including the use of mobile production sites on trucks, which both expands the geographical reach of production and helps avoid detection. There are also reports of 'production to order', with pop-up MDMA laboratories being set up and then rapidly dismantled once a production run is completed. Producers also appear now to have easy on-line access to relatively inexpensive tableting machinery from China, and to pre-mixed coloured excipients and tablet die stamps (EMCDDA, 2016b).

The issue of low-level but increasing local production of ecstasy tablets has also been identified. There are reports of 'hobby chemists' from a number of countries, and also individuals who purchase MDMA crystals from internet markets and produce tablets themselves (EMCDDA, 2016a).

A more globalised market place

Until recently, facilities in the Netherlands and Belgium have represented the major global MDMA production hub, with products trafficked by crime groups primarily to European and North American markets. In recent years, however, reports of significant production taking place outside of Europe, including in Canada, the US and China (UNODC, 2015) have also now become more common.

Despite this development, a significant proportion of the MDMA manufactured in Europe still appears to be intended for intercontinental export (to the Americas, Asia and Australia), probably stimulated by the higher unit prices this drug can generate in some of these markets. International trafficking also appears to be taking advantage of the opportunities of internet sales of the drug and distribution through legitimate high speed postal and parcel delivery services. Further innovation that facilitates export is the new trade in MDMA oil, which is trafficked within Europe and globally, for subsequent processing and chemical conversion, at its destination.

MDMA production and trafficking may also now be more integrated with the movement of other illicit cargos. Seizures of MDMA alongside other products indicate that MDMA trafficking is often linked to more extensive multi-commodity trafficking networks. Some MDMA is known to be exported along the so-called reverse Balkan Route, usually associated with heroin trafficking into Europe, with large amounts of the drug recently seized in Turkey (3.6 million tablets in 2014 EMCDDA, 2015).

Changes in MDMA tablet content and adulterants

MDMA was the original psychoactive chemical in ecstasy tablets, often along with adulterants such as caffeine. Prior to 2005 most tablets tested in Europe contained MDMA or another MDMA-like substance (MDEA, MDA) as the only psychoactive ingredient. In France, for example, the SINTES monitoring system reported that 82% of more than 7000 tablets collected and analysed between 1999 and 2004 contained MDMA (Giraudon &