Drug and Alcohol Review (March 2006), 25, 111 – 113

Taylor & Francis
Taylor & Francis Group

The rise of Viagra among British illicit drug users: 5-year survey data

JIM McCAMBRIDGE[1], LUKE MITCHESON[1,2], NEIL HUNT[2,3] & ADAM WINSTOCK[3]

[1]*National Addiction Centre, Institute of Psychiatry, King's College London, London, UK,* [2]*South London and Maudsley NHS Trust and KCA, UK, and* [3]*South West Sydney Area Health Services and National Drug and Alcohol Research Centre, University of New South Wales, Australia*

Abstract

Viagra use among British nightclubbers, a sentinel population of illicit drug users, was first reported in 1999. There has since been little attention paid to the evolution of patterns of non-prescribed use, apart from among men who have sex with men. Beginning in 1999 an annual survey has been conducted with a specialist dance music magazine, permitting cross-sectional comparisons over time. Rising levels of lifetime and current use prevalence and data on patterns of both male and female use are reported, along with elevated prevalence levels among both gay men and women. Experimentation with Viagra appears increasingly to have become established among British nightclubbers who use recreational drugs. Ethnographic and epidemiological study and monitoring of adverse consequences is now needed to fully appreciate reasons for use and the extent of possible harms. [McCambridge J, Mitcheson L, Hunt N, Winstock A. The rise of Viagra among British illicit drug users: 5-year survey data. *Drug Alcohol Rev* 2006;25:111 – 113]

Key words: illicit drug use, sexual behaviour, Sildenafil, Viagra.

Introduction

Sildenafil (Viagra) was licensed as a treatment for erectile dysfunction in the United Kingdom in 1998. Shortly afterwards, the first report of non-prescribed use by recreational drug users in nightclubs appeared [1]. In the years since then, uninvited direct marketing of Viagra has become a regular feature of internet access and usage. Offered without prescription and at low cost, it would be surprising if such access has not contributed to a rapid expansion of recreational use, in light of the much-vaunted effects of this drug within popular culture [2].

Nightclubbers constitute a sentinel population of illicit drug users, among whom early evidence of wider trends among young people may be obtained [3,4]. A further report on the originally reported small sample ($n = 15$) described patterns of experimental drug use among nightclubbers experienced in the use of a wide range of illicit drugs [3]. The subsequent lack of study of the evolution of patterns of use of this drug, both among illicit drug users and non-users, is somewhat surprising.

There is, however, one substantial exception to this lack of study: examination of patterns of risk among men who have sex with men (MSM). Although almost all these studies have taken place within the United States, an early British study identified a lifetime prevalence rate of 15% among MSM recruited in London gyms [5]. Swearingen & Klausner [6] have recently reviewed 14 studies reporting data on the sexual risks associated with Viagra use. Viagra users were found to be approximately four times as likely to have engaged in unprotected anal sex with a partner of unknown or serodiscordant HIV status [odds ratio (OR) range 2.0 – 5.7 unweighted mean 3.9]. In addition, Viagra use was found to be elevated among HIV positive men reporting newly diagnosed sexually transmitted infections [6]. One relatively small study not included in this review found no evidence of increased sexual risk among MSM Viagra users,

Jim McCambridge, National Addiction Centre, Institute of Psychiatry, King's College London, 4 Windsor Walk, Denmark Hill, London SE5 8AF, UK, Luke Mitcheson, National Addiction Centre, Institute of Psychiatry, King's College London, 4 Windsor Walk, Denmark Hill, London SE5 8AF, UK and South London and Maudsley NHS Trust and KCA, UK, Neil Hunt, South London and Maudsley NHS Trust and KCA UK, Adam Winstock, South West Sydney Area Health Services and National Drug and Alcohol Research Centre, University of New South Wales, Australia. Correspondance to Jim McCambridge, National Addiction Centre, Institute of Psychiatry, King's College London, 4 Windsor Walk, Denmark Hill, London SE5 8AF, UK. E-mail: J.McCambridge@maiop.kcl.ac.uk

Received 5 May 2005; accepted for publication 28 September 2005.

ISSN 0959-5236 print/ISSN 1465-3362 online/06/020111–03 © Australasian Professional Society on Alcohol and Other Drugs
DOI: 10.1080/09595230500537167

but did find much higher prevalences of ecstasy and cocaine use [7].

Methods

Since 1999 an annual survey of nightclub drug users has been conducted in conjunction with *Mixmag*, a specialist dance music magazine [4]. Readers are invited to return by freepost a questionnaire printed in the magazine itself. In 2003 this option was supplemented by online access to the questionnaire. This innovation apart, data collection procedures have been identical across the years, permitting cross-sectional comparisons over time [8]. Ethical approval for this study was obtained from the Maudsley/Institute of Psychiatry Ethical Committee.

These data share a fundamental weakness with previous studies of Viagra use in that they have not resulted from probabilistic sampling and hence their generalisability is inherently problematic [6]. However, in the present study it is not being claimed that data from any 1 year represent a reliable estimate of prevalence in any wider population. Rather, repeated measurements over time, however, specifically allow inferences to be made on time trends where data collection procedures and other threats to the reliability of data can be shown to be constant or be effectively controlled.

Between 1999 and 2003, 1151, 795, 988, 491 and 1134 UK responses (736 web, 398 post) have been received, respectively (total $n = 4559$). Approximately 15% ($n = 686$) reported prior study participation. Mean age of respondents was 24 years and approximately 40% were women, with little variation in the age and gender profile of the sample in each year. Prevalence data were modelled using logistic and multiple regression in STATA version 8 to control for potential confounding by age, gender, data collection method (post/web), number of responses per year and prior study participation.

Results

Rising lifetime and recent use prevalence is evident from the table for both men and women, with approximately one in seven having ever tried this drug in the latest sweep of the survey. The ratio of last month to lifetime prevalence has been approximately 30% in 3–5 years. Mean age of first use has declined from 27.7 years in 1999 to 25.1 years in 2003. Although men are more likely to have used Viagra, women are younger at first use (23.5 vs. 26.8 years, $t = 4.28$, $p < 0.0001$). For most, use is not frequent: of 53 reporting use within the last month in 2003, 33 used once, 11 twice, seven on three to five occasions and two on most days (Table 1).

The time trends were found to be robust to potential confounding when the data were modelled. Lifetime and last month prevalence were both found to be increasing by approximately 70% per year [OR 1.70 (95% CI 1.51–1.91), $p < 0.001$; OR 1.70 (1.38–2.10), $p < 0.001$, respectively]. Similarly, age of first use is reducing over time, by approximately 0.23 years each year (0.002–0.47, $p = 0.048$).

Sexual orientation was specifically considered only in the 2003 sample, as these data were not available in all earlier years. Prevalence was found to be elevated among those describing themselves as homosexual or bisexual. Lifetime prevalence findings were: heterosexual 13.5% (127/939); bisexual 25% (25/100); homosexual 37.5% (21/56); χ^2 29.84, 2 df, $p < 0.001$. This sexuality gradient was also detected for last month prevalence: heterosexual 3.5% (33/939); bisexual 8% (8/100); homosexual 16% (9/56); χ^2 22.08, 2 df, $p < 0.001$. When these analyses were repeatedly separately for men and women similar statistically significant findings results were obtained. However, there was one difference between men and women. Among men, prevalence was elevated among those describing themselves as homosexual [lifetime and last month prevalence 42% (19/45) and 20% (9/45) respectively], with bisexual and heterosexual men

Table 1. *Lifetime and last month prevalence of Viagra use*

	1999 ($n = 1151$)	2000 ($n = 795$)	2001 ($n = 988$)	2002 ($n = 491$)	2003 ($n = 1134$)
Ever used					
Men	3.19% (22)	5.52% (27)	10.42% (59)	10.36% (26)	16.97% (121)
Women	1.11% (5)	4.64% (14)	6.74% (25)	7.66% (18)	12.78% (52)
Used last month					
Men	1.02% (7)	1.02% (5)	2.12% (12)	4.38% (11)	5.89% (42)
Women	0.22 (1)	0.66% (2)	0.81% (3)	0.85% (2)	2.21% (9)

In 2001 and 2003 there were an additional four and five cases who had ever used this drug, for whom gender data were missing. Of these, one and two had used within the previous month, respectively.

being similar. Among women, while heterosexual and homosexual women were similar, prevalence was elevated among those describing themselves as bisexual (lifetime and last month prevalence 29% (18/62) and 8% (5/62) respectively).

Discussion

Notwithstanding the limitations of this survey [4,8], over a recent 5-year period Viagra does appear to have become firmly established within the drug-using repertoires of British nightclubbers, and wider diffusion of use among young people and other adults may be expected to occur. Although most use appears to be infrequent or transient, the advent of Viagra use within this population and beyond raises a number of public health questions.

Drug interactions with prescribed drugs have been reported previously [9]. Potential cardiovascular interactions with illicit drugs are also of specific concern [1,4]. This drug is not licensed in the United Kingdom for women [10], so all female use would appear to be on an unprescribed basis, carrying with it unknown consequences. Unfortunately, no data are available on the proportion of men in this sample who obtained this drug on prescription, nor on other sources of this drug, apart from the original reports of sales alongside other illicit drugs in nightclubs [1].

Plausible mechanisms linking Viagra with other recreational drug use and sexual risk are straightforward to discern. Temporary erectile incapacity associated with alcohol or stimulant drugs, for example, may be ameliorated with Viagra. Greater friction may occur during sex as a result of enlarged erection, heightening the risk of sexually transmitted infections. Associations between Viagra use and risky sexual behaviours and sexually transmitted infections may extend more widely than those reported previously for men who have sex with men [6]. We are at an early point in the development of the study of interactions with drugs used for recreational purposes. Although it is somewhat surprising that reports of adverse effects are so limited, there is also much scope for concern that there are unevaluated public health risks [2].

Elevated prevalence among particular groups, as well as study of the broader trends, may also benefit from ethnographic and other qualitative data. Targeted studies investigating patterns of use, along with intended and unintended consequences, may not be difficult to undertake. Study of the diffusion of Viagra across different populations of drug users needs also to incorporate investigation of patterns of use by gender. It seems plausible that female illicit drug users, as well as their male counterparts, may be more confident about drug experimentation than non-users. Epidemiological study of patterns of use, including associations with other drug use and high-risk sexual behaviours, and monitoring of adverse consequences, is now also needed to fully appreciate the extent of actual use and associated harms. This will assist efforts towards the diminution of identified harms.

Acknowledgements

We are grateful to Selina Lovell for data entry and other support, and to the staff and readers of Mixmag. The first author is supported by a Wellcome Trust Health Services Research Fellowship. The comments of the reviewers were very helpful.

References

[1] Aldridge J. Measham F. Sildenafil (Viagra) is used as a recreational drug in England. BMJ 1999;318:669.
[2] Alpert JS. Viagra: the risks of recreational use. Am J Med 2005;118:569 – 70.
[3] Measham F, Aldridge J, Parker H. Dancing on drugs: risk, health and hedonism in the British club scene. London: Free Association, 2001.
[4] Winstock AR, Griffiths P, Stewart D. Drugs and the dance music scene: a survey of current drug use patterns among a sample of dance music enthusiasts in the UK. Drug Alcohol Depend 2001;64:9 – 17.
[5] Sherr L, Bolding G, Maguire M, Elford J. Viagra use and sexual risk behaviour among gay men in London. AIDS 2000;14:2051 – 3.
[6] Swearingen SG, Klausner JD. Sildenafil use, sexual risk behaviour, and risk for sexually transmitted diseases, including HIV infection. Am J Med 2005;118:571 – 7.
[7] Crosby R, DiClemente RJ. Use of recreational Viagra among men having sex with men. Sex Trans Infect 2004; 80:466 – 8.
[8] McCambridge J, Mitcheson L, Winstock A, Hunt N. Five year trends in patterns of drug use among people who use stimulants in dance contexts in the UK. Addiction 2005;100:1140 – 9.
[9] Goldmeier D, Lamba H. Prolonged erections produced by dihydrocodeine and sildenafil. BMJ 2002;324:1555.
[10] Mayor S. Pfizer will not apply for a license for sildenafil for women. BMJ 2004;328:542.