

## Letter to the Editors

# Misuse of the $\gamma$ -aminobutyric acid analogues baclofen, gabapentin and pregabalin in the UK

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$\gamma$ -Aminobutyric acid (GABA)-analogue medications, including gabapentin and pregabalin, are recommended first-line treatments for neuropathic pain in the UK [1], and pregabalin has been used in the treatment of various psychiatric conditions, including generalized and social anxiety disorders [2]. Consequently, there has been a large increase in prescription of these drugs over the last decade [3]. The European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) recently highlighted early reports from pharmacovigilance data from four countries, including the UK, regarding the potential for misuse of these medications and indications from toxicological analyses of the involvement of these medications in deaths of users [4]. There is also concern regarding their access from online pharmacies and misuse of legitimately prescribed medication [5]. Furthermore, dependent users of recreational drugs may seek access to these medications in an attempt to prevent or treat withdrawal symptoms [3, 6, 7]. However, to date there have been no data reported on the prevalence of the misuse of these medications in any country. The aim of this study was to determine the prevalence, frequency and sources of misuse of the GABA analogues (baclofen, gabapentin and pregabalin) in the UK.

We partnered with a global market research company, GMI (<http://www.gmi-mr.com/global-panel>), which has an established global consumer panel of millions of persons. We devised a question-based survey that was formulated by the company into an Internet-based survey (see Appendix S1). Invitations were sent by GMI to existing market research panel members in the UK only, between the ages of 16 and 59 years, and respondents were capped at a maximum of 1500. The raw data of the responses to the questions were given to us, linked to a fully anonymized unique personal identifier. Basic demographics were collected together with data on lifetime prevalence and frequency of misuse of baclofen, gabapentin

and pregabalin; where individuals had misused one of these drugs, they were asked to indicate the source(s) of supply for misuse. We included questions based on lifetime prevalence of use of recreational drugs [cocaine, cannabis and 3,4-methylenedioxy-*N*-methylamphetamine (MDMA, 'ecstasy')] so that we could benchmark against existing national data provided by the 2011/2012 Crime Survey for England and Wales [8]. In this way, we could confirm that our survey population provided a reasonable sample of the national population in the UK with respect to recreational drug use and therefore medications misuse.

The online survey was completed by 1500 individuals [male, 49.1% ( $n = 737$ ) and female, 50.9% ( $n = 763$ )]; 9.1, 40.5, 21.1 and 29.3% were aged 16–20, 21–39, 40–49 and 50–59 years old, respectively. Lifetime prevalence of use of recreational drugs was comparable to national data from the 2011/2012 Crime Survey for England and Wales. Within the survey cohort, self-reported lifetime prevalence of use of cocaine was 8.1%, cannabis 28.1% and MDMA 8.2%; compared with 9.5, 31.0 and 8.6%, respectively, for the three recreational drugs in the 2011/2012 Crime Survey for England and Wales [7]. The lifetime prevalence of misuse of any of the three surveyed GABA-analogue medications was 2.5% ( $n = 38$ ); for each drug, this was 1.3% ( $n = 19$ ) for baclofen, 1.1% ( $n = 17$ ) for gabapentin, and 0.5% ( $n = 8$ ) for pregabalin. The frequency of misuse was less than once monthly in 36.8% ( $n = 14$ ), between once monthly and once weekly in 50% ( $n = 19$ ), and more than once weekly in 13.1% ( $n = 5$ ). Of the people misusing these medications, 36.8% ( $n = 14$ ) obtained their supply from multiple sources, with similar rates of sourcing overall from health services (63.1%,  $n = 24$ ), from family or acquaintances (57.8%,  $n = 22$ ) and from the Internet (47.3%,  $n = 18$ ), with only 7.8% ( $n = 3$ ) obtaining the medication from abroad. Misuse of medication that had been legitimately prescribed to the individual was the sole source for only 13.1% ( $n = 5$ ).

This study, to our knowledge, is the first report to estimate the prevalence of misuse of GABA-analogue medications conducted in a cohort with similar lifetime prevalence of use of recreational drugs to the UK population. Whilst we did not confirm substance misuse by structured interview or specific analysis, our results suggest that there is appreciable misuse of baclofen, gabapentin and pregabalin in the UK, with approximately one in 40 of survey respondents self-reporting misuse of any of the GABA-analogue medications. The provenance of the majority of misuse appears to be from sources other than legitimately prescribed medication, which has important implications for future strategies to reduce access to these medications. Similar surveys can be used to determine the robustness of early pharmacovigilance data, such as that provided by the EMCDDA, to help regulatory and law-enforcement agencies understand the epidemiology of substance misuse and decide whether further control and/or monitoring on supply and use is required. In addition, further work is needed to understand the reasons for misuse, to enable appropriately targeted harm-reduction activities through multi-agency responses.

## Competing Interests

All authors have completed the Unified Competing Interest form at [http://www.icmje.org/coi\\_disclosure.pdf](http://www.icmje.org/coi_disclosure.pdf) (available on request from the corresponding author) and declare: no support from any organization for the submitted work; no financial relationships with any organizations that might have an interest in the submitted work in the previous 3 years; no other relationships or activities that could appear to have influenced the submitted work.

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## Supporting Information

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### Appendix S1

Internet-based questionnaire