

## Long-term benzodiazepine and Z-drugs use in the UK:

a survey of general practice

### Abstract

#### Background

Current British National Formulary (BNF) guidelines state that benzodiazepines and zolpidem, zopiclone, and zaleplon, commonly known as Z-drugs (BZD), be prescribed for no more than 4 weeks, although anecdotal data suggest that many patients are prescribed BZDs for much longer. As there are no recent, evidence-based estimates of long-term (>12 months) BZD use in the UK, the scale of this potential problem is unknown.

#### Aim

To produce the first reliable, evidence-based estimate of long-term BZD use in the UK.

#### Design and setting

Estimates of UK long-term BZD use were projected from data obtained from a survey conducted in 2014–2015 by the Bridge Project, a prescribed-drug withdrawal support charity in the North of England (Bradford).

#### Method

Percentages of long-term users of BZD were derived from the survey, by sampling primary care GP surgeries with around 100 000 registered patients, and these were applied to UK-wide NHS patient numbers. The data were filtered to exclude the very young and old, and those with other health issues.

#### Results

The mean percentage of registered patients prescribed BZDs for more than a year in the survey sample is 0.69% [95% confidence interval (CI) = 0.54 to 0.84]. Applying this value to national patient numbers yields a mean projection of 296 929 [95% CI = 232 553 to 361 305] long-term users of BZD in the UK. The data also suggest that as many as 119 165 of these patients may be willing to accept prescribed drug dependency withdrawal services.

#### Conclusion

More than a quarter of a million people in the UK are likely to be taking highly dependency-forming hypnotic medication far beyond the recommended time scales. As there is evidence that long-term use of BZDs causes adverse physiological and neurological effects, and protracted withdrawal (with associated complications), this represents a serious public health problem.

#### Keywords

benzodiazepines; drug dependence; hypnotics and sedatives; withdrawal; Z-drugs.

### INTRODUCTION

Benzodiazepines are hypnotic drugs that enhance the activity of gamma-aminobutyric acid (GABA) at the GABA<sub>A</sub> receptor. Zolpidem, zopiclone, and zaleplon, commonly known as Z-drugs, are non-benzodiazepine hypnotics that share a similar mode of action but are chemically distinct.<sup>1</sup> Both benzodiazepines and Z-drugs (BZDs) are indicated for the short-term relief of severe or disabling anxiety, whether this occurs alone or in association with insomnia or short-term psychosomatic, organic, or psychotic illness.<sup>2</sup> Approximately 16 million prescriptions for BZDs were issued in England during 2015 – a figure that has broadly remained steady since 2011,<sup>3</sup> but which does not indicate the number of patients taking BZDs. Concerns regarding the addictive potential of these drugs have been highlighted for many years,<sup>4,5</sup> leading the British National Formulary (BNF) to recommend that uninterrupted usage not exceed 4 weeks,<sup>2</sup> as long-term use can cause adverse neurological, cognitive, and physical effects, but also high degrees of physical and psychological dependency.<sup>6–8</sup>

It is now recognised that withdrawal from benzodiazepines and Z-drugs can be protracted, generally lasting between 6 and 18 months following the last dose, and sometimes even longer.<sup>2,9</sup> Withdrawal charities report numerous cases of patients taking at least 3 or 4 years to recover, with some being left with residual symptoms,

such as tinnitus, for years beyond this time frame.<sup>7</sup> In all, long-term BZD use (and withdrawal from it) can generate a range of long-term disabling effects, which can impact negatively on many aspects of a person's life, threatening relationships, careers, and financial stability (Personal communication, Council for Evidence-Based Psychiatry, 2014; available from authors on request).

Currently in the UK, there are no dedicated NHS services available to support these long-term users of BZD during withdrawal, and, instead, patients have to rely on a small number of inadequately resourced specialist support charities, whose provision extends to only a handful of local regions, covering <5% of the population. Consequently, in recent years, a nationwide patient movement has materialised, alongside two separate All-Party Parliamentary Groups, which together have requested that the Department of Health (DH) and Public Health England (PHE) fund specialist withdrawal services for those affected by prescribed drug dependence. A general response by each department has focused on a lack of authoritative data on the number of long-term users in the UK, and, accordingly, on the number of those affected by dependence and withdrawal. In the absence of a robust indication of need, therefore, both departments have argued that it is difficult to establish a clear basis for the provision of prescribed drug withdrawal services.<sup>10</sup> This has been a consistent position

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### How this fits in

Although it is acknowledged that many people in the UK are taking benzodiazepines and Z-drugs (BZD) long term, there is no up-to-date, evidence-based estimate of the number of long-term UK users of these drugs. This research fills this data gap, and offers recommendations on how the problems associated with BZD dependence and withdrawal can be best addressed at both clinical and policy levels.

of PHE and DH for some years.<sup>10</sup>

An up-to-date, evidence-based estimate of the number of long-term users of BZD is therefore required to inform policy decision-making regarding the allocation of withdrawal resources. The best existing estimate, extrapolated from a small survey by the BBC *Panorama* television programme in 2001,<sup>11</sup> is now 16 years out of date, and therefore immaterial to current policy decision-making. Nonetheless, the continued existence of a large online community of prescribed drug dependents (such as [www.benzo.org.uk](http://www.benzo.org.uk); [www.recovery-road.org](http://www.recovery-road.org) — antidepressant and benzodiazepine withdrawal support; and [www.benzobuddies.org](http://www.benzobuddies.org) — benzodiazepine withdrawal support) suggests that the numbers today may be substantial. If policy decision-making is to be usefully informed, it is important to determine current levels of long-term users of BZD in the general population. New data on the percentage of prescribed drug dependents from a sample of general practice surgeries allow such estimates to be calculated.

### METHOD

The data are derived from a recent survey of GP surgeries in Bradford, UK, conducted by the Bridge Project in 2014–2015, also based in the Bradford metropolitan area. As part of its procedure of identifying local long-term users of BZD who may benefit from help in withdrawing, a Bridge Project key worker visited each practice to obtain data on BZD use. In each surgery, data were jointly gathered by the respective clinical medical lead and project worker. Data were accessed using the NHS patient record system (SystemOne) to produce a list of both long- and short-term users within each surgery. The data were filtered either by the surgery or the project, based on the criteria outlined below.

The data include the number of registered patients at each surgery, the number of patients using BZDs, the number of

patients whose use can be considered long term (defined as persons taking these medications for at least 12 months, which is significantly beyond the 2–4 weeks recommended by the BNF), and the number of long-term users of BZD who agreed to accept help in ending their pharmacological dependency. The figures were filtered to exclude those <16 years and >80 years, those in receipt of palliative care, those suffering illness at the time of the survey, those with a diagnosis of epilepsy, and those with severe and enduring mental health issues.

To estimate the total number of long-term users of BZD in the UK, the mean percentage and standard error of long-term users across surgeries were calculated. These percentages are converted into an estimate of national long-term BZD users by multiplying them by the number of patients aged 16–80 years registered at UK GP surgeries (after applying the exclusion criteria listed above) from figures published by the Health and Social Care Information Centre (2014).<sup>12</sup> An alternative estimate is calculated as the percentage of such users across the entire sample, multiplied by the number of registered patients. The number of patients who might be willing to accept help to end long-term use is determined by multiplying the estimated number of long-term users by the overall percentage of users of BZD who have agreed to take advantage of the charitable services offered at the surgeries sampled. All calculations were performed in Microsoft Excel 2010.

### RESULTS

After filtering, the surgeries surveyed have a total of 97 798 registered patients. The mean percentage of registered patients aged 16–80 classed as long term (>1 year) BZD users across the surgeries sampled is 0.69% (95% confidence interval [CI] = 0.54 to 0.84). When this value is applied to nationwide patient numbers, it yields a mean projection of 296 929 (95% CI = 232 553 to 361 305). long-term users of BZD in the UK. Using the overall percentage of long-term users from all sampled surgeries (that is, ignoring between-surgery variation) yields a very similar estimate (266 905). In either case, the values indicate a substantial problem. The results also suggest that 35% of all users of BZD are taking these drugs long term — that is, for at least 12 times longer than the BNF recommends. In addition, based on the proportion of patients in the survey area who consented to support from the Bridge Project (43.13%), the authors estimate that as many as 119 165 long-

term users of BZD in the UK are likely to be willing to accept services designed to free them from prescribed drug dependency.

## DISCUSSION

### Summary

The results indicate that more than a quarter of a million people in the UK are likely to be taking dependency-forming BZD medication far beyond the recommended usage of 2–4 weeks, and that as many as 119 165 of these patients may be willing to accept help with withdrawal. However, NHS provision for involuntary dependency services is sparse.<sup>13</sup> As a parliamentary survey revealed in 2012, of the 100 primary care trusts that responded, 83 acknowledged that they had no services to support people with prescribed drug dependence, 11 said they had partial services, and only six confirmed that they had services<sup>13</sup> — a situation exacerbated by the increased delegation of funding to local authorities since 2013. As there is already evidence that long-term use of BZDs causes adverse physiological and neurological affects,<sup>6,14</sup> and protracted withdrawal,<sup>9</sup> this absence of dedicated support presents a problem, particularly at a time when efficiency restrictions in the NHS have already led to the closure of one of the few withdrawal charities.<sup>15</sup>

### Strengths and limitations

The data presented here represent the only recent (<16 years old), systematic survey of BZD use in the UK. The fact that the sample contains both urban and rural GP surgeries, encompassing a range of surgery sizes (that is, numbers of patients), increases the probability that the estimates derived from the data are representative of the situation nationwide. The between-surgery variation enables the calculation of a mean estimate of the number of users of BZD with a corresponding CI, thus providing a more accurate projection than a single value.

The data themselves are subject to several caveats in terms of representativeness. In particular, they are taken only from a single geographical area, although spanning both urban and semi-rural areas, which may limit their applicability to other areas of the UK, as demographic profiles present elsewhere will differ to some extent. The data are also self-reported, which may make them less reliable than those gathered by other means. Although it is not possible to estimate from the data themselves the degree to which this may have affected the results, previous work suggests that BZD use may be underreported, which

would make the estimates reported here conservative.

In addition, the data have been subject to a filtering process, described previously. The selection criteria were developed by the Bridge Project to help identify those patients who could benefit most from the withdrawal services they offer. Given these criteria, and the fact that the Bridge Project has encountered surgeries that appear to have underreported the number of users of BZD, the projections reported here are necessarily conservative. Although still a relatively small sample, with all of the caveats that this entails, these data represent the only reliable information available on long-term use of BZDs in the UK.

### Comparison with existing literature

The existence of long-term users of BZDs has been reported by others.<sup>5,11,14</sup> The research presented here is the first that uses primary care data to estimate the number of long-term users in the UK. Additionally, the authors are able to estimate the number of patients identified as willing to accept withdrawal support for prescribed drug dependency.

The authors are aware that BZDs are not the only dependency-forming medications. Quinlan *et al*, in a recent editorial in the *British Journal of General Practice*, drew attention to rising opioid dependency, and the lack of both dedicated withdrawal support and essential data on the scale of the problem regarding all dependency-forming medications.<sup>16</sup> Additionally, Alderson has more recently argued that GPs should stop prescribing opioid medication except for palliative care, owing to their serious adverse and dependency-forming effects.<sup>17</sup> Although this study finally fills this data gap, at least with respect to BZDs, its methodology could also be applied to determine the scale of long-term use, and thus dependency, on medications such as opioids and gabapentinoids, a study the authors are now proposing to undertake.

### Implications for research and practice

Assuming there is growing political will to tackle poor provision, the authors make four recommendations with respect to how the harms associated with long-term BZD use could be satisfactorily addressed in the future. Although the recommendations primarily pertain to BZDs, they may also be highly pertinent to other dependency-forming medications, such as opioids and gabapentinoids.

The first recommendation is to reduce prescribing levels by ensuring adherence

to existing guidelines for prescribing and withdrawal, and develop new guidelines where needed. Many of the patients experiencing problems with prescribed medicines may have avoided the associated harms if existing prescribing guidelines had been followed. As this study reveals, although BZDs are indicated for short-term use only in the BNF, a large cohort continue to take these drugs long term, and withdrawal charities report many cases of new long-term prescriptions. Additionally, in the experience of the withdrawal charities, there appears to be a correlation between the severity of symptoms and the speed of withdrawal. The harm sometimes caused by steep withdrawal or a rapid taper is well documented. For many users this can lead to years of debilitating withdrawal reactions (Personal communication, Council for Evidence-Based Psychiatry, 2014; available from authors on request). Adherence to tapering guidelines in the BNF for BZDs must be assured.

Second, more research is required into the harms associated with long-term BZD use, as well as the demographics and geography of long-term users. Although there is extensive testimony from individuals who have been harmed by these medications, there has been very little systematic research in key areas. The percentage of long-term users of BZD affected by withdrawal, and how different species of withdrawal correlate with dosage, length of use, and withdrawal method, needs to be determined. Furthermore, although this current study provides the first estimate for the number of long-term users of BZD in the UK, there are no data showing more detailed demographic and geographic usage trends. Such data will

be crucial in guiding withdrawal outreach programmes, should current provision be up-scaled. With reports of symptoms such as tinnitus and nerve pain lasting many years, more research is also needed into the physiological and neurological harms associated with long-term use.

Third, there also needs to be a mandatory national provision of prescribed drug withdrawal services. Most patients are unaware of the risks of dependency and long-term effects, and therefore do not seek out services to help with withdrawal. GP practices must position themselves to actively identify and contact long-term users. In Oldham, Bradford, and Liverpool withdrawal charities have had considerable success working with GP practices to identify, communicate with, and ultimately help patients safely withdraw from their medications, and this model of provision should be extended across the country. The provision of these services should be made mandatory to ensure that all patients across the UK are, at the very least, offered the support they need if they elect to withdraw.

Finally, the authors also recommend that a national helpline and accompanying website for prescribed drug dependence be established. This would provide an essential resource for patients, carers, families, and doctors, delivering a low-cost, yet effective, national response to a recognised public health issue. A national helpline would also be the first step towards the provision of local specialist support services, as it would also enable the NHS to gather further data on the scale and nature of the problem, and highlight gaps in current local service provision.

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#### **Ethical approval**

The study was approved by the ethics committee of the Department of Life Sciences at the University of Roehampton (LSC17/210).

#### **Provenance**

Freely submitted; externally peer reviewed.

#### **Competing interests**

The authors have declared no competing interests.

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