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Research paper

Clinical management following self-harm in a UK-wide primary care cohort

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ABSTRACT

Background: Little is known about the clinical management of patients in primary care following self-harm.

Methods: A descriptive cohort study using data from 684 UK general practices that contributed to the Clinical Practice Research Datalink (CPRD) during 2001–2013. We identified 49,970 patients with a self-harm episode, 41,500 of whom had one complete year of follow-up.

Results: Among those with complete follow-up, 26,065 (62.8%, 62.3–63.3) were prescribed psychotropic medication and 6318 (15.2%, 14.9-15.6) were referred to mental health services; 4105 (9.9%, CI 9.6–10.2) were medicated without an antecedent psychiatric diagnosis or referral, and 4,506 (10.9%, CI 10.6–11.2) had a diagnosis but were not subsequently medicated or referred. Patients registered at practices in the most deprived localities were 27.1% (CI 21.5–32.2) less likely to be referred than those in the least deprived. Despite a specifically flagged NICE '*Do not do*' recommendation in 2011 against prescribing tricyclic antidepressants following self-harm because of their potentially lethal toxicity in overdose, 8.8% (CI 7.8-9.8) of individuals were issued a prescription in the subsequent year. The percentage prescribed Citalopram, an SSRI antidepressant with higher toxicity in overdose, fell sharply during 2012/2013 in the aftermath of a Medicines and Healthcare products Regulatory Agency (MHRA) safety alert issued in 2011.

Conclusions: A relatively small percentage of these vulnerable patients are referred to mental health services, and reduced likelihood of referral in more deprived localities reflects a marked health inequality. National clinical guidelines have not yet been effective in reducing rates of tricyclic antidepressant prescribing for this high-risk group.

1. Introduction

Self-harm is one of the strongest risk factors for death by suicide (Cooper et al., 2007; Bergen et al., 2012) and general practitioners (GPs) play an important role in managing risk among patients who have recently harmed themselves. However, research evidence for the clinical management of self-harm specifically in primary care settings is lacking because most published studies have been conducted using hospital emergency department and admissions data. Nonetheless, the important role played by primary care in the assessment of people who self-harm was emphasised in 2004 by National Institute for Health and Care Excellence (NICE) clinical guideline 16: *Self-harm: the short-term physical and psychological management and secondary prevention of self-harm in primary and secondary care* (NICE, 2004). Despite this strong emphasis, just 14 of its 152 recommendations provided

Abbreviations: CI, Confidence Interval; CPRD, Clinical Practice Research Datalink; FHSA, Family Health Services Authority; GP, General Practitioner; IMD, Index of Multiple Deprivation; LSOA, Lower-Layer Super Output Area; MHRA, Medicines and Healthcare products Regulatory Agency; NHS, National Health Service; NICE, National Institute for Health and Clinical Excellence; SSRI, Selective Serotonin Reuptake Inhibitor; UK, United Kingdom; YLL, Years of Life Lost

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instruction to primary care teams, and this was the case for only 3 of the 57 recommendations made in 2011 by NICE clinical guideline 133: *Self-harm: longer-term management* (NICE, 2011). This lack of recommendations specific to primary care is linked to the absence of research evidence for this topic.

We examined a cohort extracted from the Clinical Practice Research Datalink (CPRD) (DoH, 2011; Herrett et al., 2015). This data source enabled us to examine primary care clinical management following an episode of self-harm using data from general practices located across the UK. The purpose was not to comprehensively ascertain all incident cases of self-harm in the population, including all cases treated in secondary care settings. Rather it was to investigate individuals whose recent self-harm episodes have been brought to the attention of their GPs. We initially profiled those patients who had an antecedent psychiatric diagnosis or a new one following their index self-harm episode. However, our primary outcomes were the percentage of cohort members receiving a referral to mental health services or prescribed psychotropic medication in the subsequent year. We paid particular attention to medication that can be fatally toxic in overdose, such as tricyclic antidepressants. Finally, we aimed to assess variability in clinical management by age and gender and by practice-level deprivation.

2. Methods

2.1. Description of the data source and study cohort

The December 2013 CPRD extract that we examined included 684 general practices and more than 13 million patients, with age and gender distributions comparable to those for the whole UK population (Herrett et al., 2015; García Rodríguez and Pérez Gutthann, 1998). Validation studies have reported consistently high CPRD quality data (Herrett et al., 2015; Khan et al., 2010). The Read code system (Chisholm, 1990), the standard for UK general practice, is routinely applied in the dataset. It provides a structured hierarchy of terms relating to demography and lifestyle, symptoms, diagnoses, therapies, referrals, and laboratory test results (HSCIC, 2015).

We delineated the study cohort using a broad definition that incorporated all forms of self-harm from the mildest non-suicidal episodes through to near-fatal attempted suicide, as described previously (Carr et al., 2016). Our definition excluded alcohol-related poisonings and suicidal ideation not involving actual self-harm acts. We initially identified potentially relevant Read codes using the search terms 'deliberate', 'intent' or 'self' (to identify episodes of self-harm/harming, self-injury/injurious behaviour, self-inflicted harm/injury, harm/injury to self, self-poisoning, deliberate overdose, intentional overdose, etc.) and 'suicide attempt', 'attempted suicide' or 'parasuicide' (to identify suicide attempts). The list of codes was then reviewed rigorously by two clinicians in the study team (NK and JC) and cross-referenced with a comparable list obtained from a recent CPRD-based validation study on suicide and self-harm (Thomas et al., 2013). Our final list can be downloaded from the 'ClinicalCodes.org' repository (Springate et al., 2014).

An index self-harm episode was defined as the first occasion on which a Read code from our list was entered in a patient's clinical record. Limiting our extraction to patients deemed as being 'up to standard' for research purposes by the CPRD, our cohort consisted of individuals with a recorded index episode from 1st January 2001 to 31st December 2012. Patients were eligible for inclusion in a given year if they were aged 15–64 years and registered with a CPRD-contributing practice at the start of the year. The rationale for imposing these age restrictions was that the determinants and implications of self-harm in children and older adults are quite distinct from those of the rest of the population, and therefore warrant separate investigation and consideration. Among older persons who harm themselves, specific mechanisms such as bereavement, loneliness and social isolation (De Leo et al., 2001; Lebret et al., 2006) and physical illness, multi-morbidity and impairment (Lebret et al., 2006) play a predominant role; children aged below 15 years who harm themselves tend to have an unusually low suicidal intent and therefore a relatively low long-term risk of dying by suicide (Hawton and Harriss, 2008). To increase the likelihood that these were incident cases on entry into the study cohort, we stipulated that patients had to have been registered with a contributing CPRD practice on a continuous basis for at least a year prior to the index self-harm episode.

2.2. Classification and measurement

2.2.1. Referrals and prescriptions

These were our two primary clinical management measures. We examined referrals to mental health services and psychotropic medication prescribing that was recorded subsequent to the index self-harm episode and during the 1 year follow-up period. We identified referrals to relevant mental health services using two CPRD fields. Firstly, a Family Health Services Authority (FHSA) variable indicated the department to which the patient was referred. General practitioners are required to enter this information upon referral, and for our purposes 'Psychiatry' was the only relevant department. Secondly, we also utilised the National Health Service (NHS) specialty field. This contains more granular information, but completion by general practice staff is not compulsory when coding referrals. The NHS specialty classification included eight mental health codes: mental illness; child and adolescent psychiatry; forensic psychiatry; psychotherapy; old age psychiatry; clinical psychology; adult psychiatry; and community psychiatric nurse. We combined information from both the FHSA and NHS fields to construct a binary specialist mental health services referral indicator. The dataset also contains complete records of all prescribed medication. We extracted all prescriptions in the following psychotropic medication classes: typical, atypical and depot antipsychotics; lithium and other mood stabilisers; selective serotonin reuptake inhibitor (SSRI), tricyclic and other antidepressants; benzodiazepines; opioid analgesics; other anxiolytics and hypnotics. Our list of Multilex product (FirstDataBank, 2014) codes for denoting psychotropic medications can be downloaded from 'ClinicalCodes.org' (Springate et al., 2014).

2.2.2. Diagnoses

Psychiatric diagnoses were measured according to any prior history or a new diagnosis made after the index self-harm episode. They were classified as: schizophrenia-spectrum; bipolar disorder; depression; anxiety disorders; personality disorders; and eating disorders. Read code lists were compiled for each diagnostic category and were reviewed by two clinically qualified study team members (NK and JC). The final lists can be accessed at 'ClinicalCodes.org' (Springate et al., 2014); a rationale for these coding decisions is given in Supplemental file 1.

2.2.3. Clinical consultation

The CPRD 'consultation type' field contains 59 categories, including numerous options that denote telephone consultations or administrative processes. A previous CPRD-based case-control study of death by suicide found that just eight of these categories were used in 96% of patient record entries (Appleby et al., 2014). As in that study, to provide a stringent measure of face-to-face contact with a GP or practice nurse, we applied categories 1 ('clinic') and 9 ('surgery consultation') only to derive our clinical