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Opiate use disorders and overdose: Medical students' experiences, satisfaction with learning, and attitudes toward community naloxone provision

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HIGHLIGHTS

- Most students had taken a history from a patient with an opioid use disorder and a third had witnessed an opioid overdose.
- Over half supported wider naloxone availability and its lay distribution to address Ireland's overdose problem.
- Few students had direct experience of overdose management although many had been exposed to patients using opiates.
- High student exposure to patients using opiates presents an opportunity to increase addiction content in medical curricula.

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ABSTRACT

Introduction: Opiate use disorder is a common condition in healthcare services in Ireland, where over 200 opiate overdose deaths occur annually. There is limited addiction medicine education at undergraduate level and medical graduates may not be adequately prepared to diagnose and manage opioid use disorders and emergency drug overdose presentations. Therefore, we examined final-year medical students' learning experiences and attitudes toward opioid use disorder, overdose and community naloxone provision as an emerging overdose treatment.

Methods: We administered an anonymous paper-based survey to 243 undergraduate medical students undertaking their final professional completion module prior to graduation from University College Dublin, Ireland. Results were compared with parallel surveys of General Practitioners (GPs) and GP trainees.

Results: A total of 197 (82.1%) completed the survey. Just under half were male, and most were aged under 25 (63.3%) and of Irish nationality (76.7%). The students felt moderately prepared to recognise opioid use disorder, but felt less prepared to manage other aspects of its care. Most had taken a history from a patient with an opioid use disorder (82.8%), and a third had witnessed at least one opioid overdose. Although 10.3% had seen naloxone administered, most had never administered naloxone themselves (98.5%). Half supported wider naloxone availability; this was lower than support rates among GPs (63.6%) and GP trainees (66.1%).

Conclusions: Our findings suggest an unmet learning need in undergraduate training on opioid use disorder, with potential consequences for patient care.

1. Introduction

Substance use disorders are widespread and are a major contributor to global disease burden and overdose related mortality worldwide (Degenhardt & Hall, 2012). There are approximately 1.3 million opioid users in Europe, and 2.2% of deaths among Europeans aged 15 to 39 are due to drug overdoses involving opioids (EMCDDA, 2015a). Over 200 opiate overdose deaths occur annually in Ireland, which is a higher rate than annual deaths due to road traffic accidents (Health Research Board, 2015; Road Safety Authority, 2014). Naloxone is an effective opioid antagonist that has been demonstrated to reduce mortality among people who use opioids, and its distribution to trained lay users is effective for reducing fatal overdose (EMCDDA, 2015b). However, its administration in Ireland has traditionally been restricted to doctors,

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nurses and paramedics (Bury, 2015). A 2016 Naloxone Demonstration Project in Ireland has recommended wider availability of naloxone in the community (Lyons, 2014), and our previous research suggests support among GPs (Barry, Klimas, Tobin, Egan, & Bury, 2017) and GP Trainees (Klimas, Tobin, Egan, Barry, & Bury, 2016) in Ireland for its wider availability.

Despite the high prevalence of substance use disorders, their teaching in medical undergraduate curricula is often deficient (el-Guebaly, Toews, Lockyer, Armstrong, & Hodgins, 2000; Klimas, 2015; Miller, Sheppard, Colenda, & Magen, 2001; O'Brien & Cullen, 2011; O'Gara et al., 2005; Polydorou, Gunderson, & Levin, 2008). However, where addiction medicine is taught, it has been demonstrated to improve medical students' knowledge, skills and self-rated competence in treating patients with substance use disorders (Cape, Hannah, & Sellman, 2006; Kothari et al., 2011). Negative attitudes toward patients with substance use disorders have been reported among medical students (Landy, Hynes, Checinski, & Crome, 2009; Roche, 1997; Silins, Conigrave, Rakvin, Dobbins, & Curry, 2007), and several studies suggest that these attitudes persist in qualified doctors (Miller et al., 2001; Polydorou et al., 2008; Wakeman, Pham-Kanter, & Donelan, 2016). Education on substance use disorders, including diagnosis, treatment and management, may not be formally defined in many medical school curricula. A qualitative survey of 32 UK medical schools found that such teaching was delivered primarily in psychiatry and general practice modules, with some teaching in public health and professional modules (Carroll et al., 2014). The International Centre for Drug Policy's (ICDP), 2007 Substance Use in the Undergraduate Medical Curriculum guidelines defined core aims and learning outcomes for undergraduate medical curricula (International Centre for Drug Policy, 2007). These guidelines recommended that students should on graduation be able to recognise overdose as a life-threatening complication of substance use, and carry out appropriate interventions, though they don't explicitly recommend training in naloxone administration as a treatment for opiate overdose. An early phase of this programme was introduced in UK medical schools between 2008 and 2011 which aimed to improve the extent and quality of substance-use related education (Goodair & Crome, 2014).

No exact figures for the number of opiate users is available for Ireland, though the European Monitoring Centre for Drugs and Drug Addiction's's's, 2011 Annual Report reported that it had the highest estimated prevalence of ‘problem opiate use’ across 17 countries in the European Union (European Monitoring Centre for Drugs and Drug Addiction, 2011). As an example of the scale of the problem, a reported 9917 people received treatment for opioid use disorders via opioid agonist therapy (methadone) in Ireland in 2017 (European Monitoring Centre for Drugs and Drug Addiction, 2017), and opioids are involved in large numbers of hospitalisations and deaths (Irish Medical Organisation, 2015). The Irish Medical Organisation has called for expansion of services for patients with heroin dependence as a priority (Irish Medical Organisation, 2015) and legislative changes to allow wider access to naloxone have been sought (Bury, 2015).

In Ireland, Bachelor of Medicine programmes are undertaken at undergraduate level in one of the six medical schools in the country, in contrast with countries such as the USA where medicine is available at graduate level only. In the senior clinical cycle of this medical curriculum, students at University College Dublin (UCD) undertake two years of formal clinical teaching and supervised clinical placements in university-affiliated sites in specialities such as clinical medicine, surgery, paediatrics, obstetrics, psychiatry and general practice. During these placements, some students are opportunistically exposed to patients with opioid use disorder and overdose, and a limited amount of structured teaching takes place. However, the current curriculum does not include formal teaching in opiate overdose and naloxone administration, and students are not expected to have administered naloxone during their medical programme.

Despite the high levels of substance use disorders in Ireland, medical students' exposure to people with these disorders is limited and usually occurs during general practice and psychiatry placements (O'Brien & Cullen, 2011). There is a lack of formal substance use education at undergraduate level in Ireland. O'Brien and Cullen argue that a redesign of undergraduate teaching is required to foster positive attitudes in medical students toward patients with substance use disorders and to develop the skills needed to provide a high standard of care to this patient population (O'Brien & Cullen, 2011).

Students' self-perceived competence in the area and their exposure to patients with opioid use disorder and overdose have not been studied to date. Given that defined addiction medicine education at undergraduate level is limited and the implementation of effective treatments such as naloxone for opiate overdose are urgently needed in Ireland (Barry et al., 2017), assessment of students' views and needs in this area is warranted. Therefore, we examined final-year medical students' exposure to opioid use disorder and overdose, self-perceived preparedness for opioid use disorder care and their attitudes toward community naloxone provision.

2. Methods

An anonymous, paper-based survey was administered to all undergraduate medical students undertaking the final professional completion module in University College Dublin, Ireland, a total sample of 243 students. This module was undertaken around three months prior to graduation.

The development of the study instrument was informed by a prior epidemiological study of opioid overdose in Dublin, by an evaluation of an educational intervention for overdose prevention and naloxone distribution among GP trainees (Klimas, Egan, Tobin, Coleman, & Bury, 2015; Klimas, O'Reilly, Egan, Tobin, & Bury, 2014) and by a modified version of the instrument used previously by this group to examine general practitioners' (GP) and GP trainees' experiences and attitudes toward opioid use disorder and overdose (Barry et al., 2017; Klimas et al., 2016). The survey consisted of 11 questions on demographics, experience of and attitudes toward opioid use disorder and naloxone distribution, and perceived competence to recognise, assess and manage opioid use disorder, using a five point scale (1 = strongly disagree, 5 = strongly agree).

The data were analysed using IBM SPSS (Version 20). The results were compared with selected results from two earlier surveys of GPs and GP trainees (Barry et al., 2017; Klimas et al., 2016), that used similar methodology. All tests were chi-square tests of association. Respondents were informed about the context for the study and they took part voluntarily. The UCD Human Research Ethics Committee granted exemption from full ethical review prior to the commencement of data collection.

3. Results

A response rate of 81.1% (197/243) was achieved. Of the 197 respondents, just under half were male (44.6%), and most were of Irish nationality (76.7%) and aged under 25 (63.3%; see Table 1). The respondents reported feeling reasonably prepared to recognise key markers of opioid use disorder (mean 3.26, SD 0.71), but felt less prepared for other aspects of opioid use disorder management: consultation with a patient about their opioid use disorder (mean 2.88, SD 0.74); assessing addiction severity (mean 2.78, SD 0.73); formulating a treatment plan (mean 2.82, SD 0.72) or managing an opioid overdose (mean 2.90, SD 0.77). Most had taken a history from a patient with an opioid use disorder (82.8%), and a third had witnessed at least one opioid overdose. A small proportion (10.3%) had seen naloxone administered, and three (1.6%) had themselves administered naloxone in overdose.

In comparison, 34.8% of GPs and 62.9% of GP trainees in parallel surveys had administered naloxone (see Table 2). Half (52.1%) of the respondents saw a need for wider naloxone availability; this was not