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Experience of adjunctive cannabis use for chronic non-cancer pain: Findings from the Pain and Opioids IN Treatment (POINT) study

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ABSTRACT

Background: There is increasing debate about cannabis use for medical purposes, including for symptomatic treatment of chronic pain. We investigated patterns and correlates of cannabis use in a large community sample of people who had been prescribed opioids for chronic non-cancer pain.
Methods: The POINT study included 1514 people in Australia who had been prescribed pharmaceutical opioids for chronic non-cancer pain. Data on cannabis use, ICD-10 cannabis use disorder and cannabis use for pain were collected. We explored associations between demographic, pain and other patient characteristics and cannabis use for pain.
Results: One in six (16%) had used cannabis for pain relief, 6% in the previous month. A quarter reported that they would use it for pain relief if they had access. Those using cannabis for pain on average were younger, reported greater pain severity, greater interference from and poorer coping with pain, and more days out of role in the past year. They had been prescribed opioids for longer, were on higher opioid doses, and were more likely to be non-adherent with their opioid use. Those using cannabis for pain had higher pain interference after controlling for reported pain severity. Almost half (43%) of the sample had ever used cannabis for recreational purposes, and 12% of the entire cohort met criteria for an ICD-10 cannabis use disorder.
Conclusions: Cannabis use for pain relief purposes appears common among people living with chronic non-cancer pain, and users report greater pain relief in combination with opioids than when opioids are used alone.

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1. Introduction

Chronic non-cancer pain (CNCP) is a common disorder that makes a major contribution to disease burden. The recent Global Burden of Disease 2010 study estimated that in 2010, low back pain, neck pain and migraines were the 1st, 4th and 8th largest contributors respectively to global non-fatal health burden (years lived with disability; Vos et al., 2012). CNCP also affects other domains, and can have a major adverse impact on social and financial well-being, as well as health care costs (Beubler et al., 2006). With the ageing of the population in many high income countries, the burden of chronic pain is likely to increase in the future.

Management of CNCP has been considered best through effective physical and psychological programmes, aided by non-opioid pharmacotherapy (Savage, 1999). Even when a combination of interventions is used, many people continue to experience pain that impairs daily functioning. Short-term controlled trials have evaluated pharmaceutical opioids in the treatment of a range of CNCP conditions and have demonstrated modest attenuation of pain (Bloodworth, 2005); one systematic review concluded that there is only weak evidence of long-term analgesic benefit (as

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defined by improved physical function and quality of life) (Noble et al., 2010).

There has been considerable debate about the role and efficacy of cannabinoids for medicinal use in a range of CNCP conditions (Bostwick, 2014; Farrell et al., 2014; Robson, 2014). A recent review concluded that there is poor quality evidence of cannabinoid analgesic efficacy from controlled trials of neuropathic pain associated with multiple sclerosis, spinal cord injury or HIV neuropathy (Farrell et al., 2014). Despite the limited data, there is strong advocacy by users for the symptomatic benefit of adjunctive cannabis, and increasing general interest in its use. Although in most jurisdictions, doctors cannot prescribe cannabis despite requests from patients to do so, in countries where cannabis use may be legally obtained via either prescription or authorised by a medical practitioner, chronic pain is the most common indication for use [e.g., the Netherlands (Hazekamp and Heerdink, 2013) and Canada (Ware et al., 2003)]. Although increasing numbers of US States are allowing the medical use of cannabis, most recently including New York, in many places cannabis remains illegal for any purpose. Many CNCP patients have resorted to obtaining cannabis from the illicit market, risking the consequences of arrest and legal penalties (Lucas, 2009), and exposure to contaminants potentially worsening the medical condition.

To date there have been few reports of patterns of use of cannabis for symptom control in chronic pain, whether initiated for this purpose or adapted for this use by recreational users (Ogborne et al., 2000; Ware et al., 2003). There is also little information about the role of cannabis use as an adjunct to the use of opioids for pain control. Clearly, there is a need for studies of efficacy of cannabis in the management of CNCP, both in its own right and as an adjunct to opioid use. In this paper, we use data from a national, community-based sample of people who have been prescribed opioids for their pain (Campbell et al., 2014b), to examine the extent to which cannabis is in fact used by this group. In Australia, as in many countries, there is no regulatory framework for medicinal cannabis or cannabinoid use, and cannabis possession and use are not legal. We specifically examined:

1. The prevalence of non-medicinal use of cannabis and of cannabis use disorder;
2. The prevalence and correlates of use of cannabis for pain;
3. The association between cannabis use for pain, opioid dose and degree of interference from pain.

2. Methods

The Pain and Opioids IN Treatment (POINT) study includes 1514 people in Australia who have been prescribed opioids for chronic non-cancer pain; full details of the cohort and study design have been reported elsewhere (Campbell et al., 2014a,b). The study was approved by the Human Research Ethics Committee of the University of New South Wales (HREC reference: #HC12149). The study also received A1 Australian National Pharmacy Guild Approval to approach pharmacists to assist with recruitment of participants (Approval no. 815).

POINT participants were 18 years or older; competent in English; and mentally and physically able to complete telephone and self-complete interviews; without serious cognitive impairments; living with chronic non-cancer pain; prescribed a Schedule 8 opioid (an Australian classification that includes morphine, oxycodone, methadone, buprenorphine and fentanyl; Therapeutic Goods Administration, 2013); and had been taking such opioids for CNCP for more than 6 weeks. A history of injecting drug use (IDU) was not an exclusion criterion, but those currently prescribed pharmaceutical opioids as opioid substitution therapy (OST) for heroin dependence were not eligible for inclusion. Persons taking opioids for cancer pain were excluded.

A database of pharmacies and chemists across Australia ($n = 5745$) and their contact details was obtained. Pharmacies were allocated into a wave and successive waves contacted each week via fax to ascertain interest in assisting with study recruitment. Those who indicated they were interested in more information, or who did not respond to the fax were called and the study was explained to a pharmacist. Ninety-three percent of all pharmacies ($n = 5332$) were contacted, and 35% agreed to assist with recruitment (Campbell et al., 2014a,b).

Interested pharmacists were enrolled in the study for a six-week period. Pharmacists were asked to approach customers that were prescribed a Schedule 8 opioid for CNCP for a period of greater than 6 weeks. Interested customers were given a flyer about the study by the pharmacist, and either contacted the POINT team directly, or gave their name and phone number to the pharmacist, who sent details to researchers. Pharmacists were reimbursed $20 for each eligible participant they referred into the study (regardless of the person's entry into the study). POINT staff determined the eligibility of those who were referred to the study, or who contacted the POINT team. Eligible participants who provided informed consent completed a baseline phone interview, which took 1–1.5 h.

2.1. Measures

The domains assessed in the interview were based on recommendations made under the auspices of the Initiative on Methods, Measurement, and Pain Assessment in Clinical Trials (IMMPACT; Dworkin et al., 2005; Turk et al., 2003) to ensure we covered all areas recommended by this expert group. Full details of the specific measures used in the POINT baseline interview are described elsewhere (Campbell et al., 2014b).

Questions on cannabis use for recreational purposes and for pain were included in the interview. Cannabis use disorders (ICD-10 harmful use and dependence) were assessed using the World Health Organization (WHO) Composite International Diagnostic Interview (CIDI) version 3.0 (Kessler and Ustun, 2004).

Pain ratings and participant reports of pain relief were obtained using the Brief Pain Inventory (BPI; Tan et al., 2004). This was assessed as a continuous score out of 10 (with higher scores indicating greater pain severity/interference). The Pain Self-Efficacy Questionnaire was also used (Nicholas, 2007; Nicholas et al., 2008); with lower score indicating poorer coping with pain. Participants were also asked if they suffered from incident pain (also termed "breakthrough pain").

Participants reported whether they were living with a range of chronic pain and physical health conditions. In order to facilitate ascertainment of pain conditions, a glossary of conditions that may lead to chronic pain was developed (see glossaries in Campbell et al. (2014b)). Questions were taken from the Chronic Conditions section of the CIDI 3.0 (Kessler and Ustun, 2004). Lifetime drug and alcohol use disorders (ICD-10 harmful use and dependence) were also assessed via the CIDI 3.0.

Past two week depression and generalised anxiety disorder were measured by the PHQ-9 and GAD-7 modules of the Pfizer Health Questionnaire (Kroenke et al., 2010). Previously validated cut-offs were used for screening tools as follows: symptoms indicating moderate to severe depression were defined as a score of $\geq$10 on the PHQ-9 (Kroenke et al., 2001), symptoms of moderate to severe anxiety were defined as a score of $\geq$10 on the GAD-7 (Spitzer et al., 2006).

Participants were asked about current prescribed medications, with examples being given for each class of medications examined. Detailed data on pharmaceutical opioid use was also obtained from a medication diary completed over a one-week period as part of the self-complete questionnaire mailed to participants. Oral morphine equivalent (OME) daily doses (in mg) were estimated following consultation and synthesis of guidelines for conversion ratios from multiple international clinical expert groups (Nielsen et al., 2014).

The Opioid Related Behaviours in Treatment (ORBIT) scale (Larance et al., 2014; Mattick et al., 2012) was designed to assist in the identification of behaviours relating to pharmaceutical opioids that may reflect problems with treatment, including diversion and non-adherence. Those who reported endorsing any of the items in the past 3 months were defined as having engaged in at least some form of non-adherence in that period.

2.2. Statistical analyses

Proportions and 95% confidence intervals (95%CI) were estimated for the cannabis use variables. Odds ratios and their 95%CI from logistic regressions were calculated to compare those using cannabis for pain compared to the rest of the POINT cohort; and among cannabis users, to compare those who used only for recreational purposes, with those using for pain. For linear variables, Mann–Whitney U or t-tests were completed. Multivariable regressions were run to examine independent correlates of cannabis use for pain. All analyses were conducted using STATA version 12.0.

3. Results

One in six of the cohort (16%) had used cannabis for pain relief, and 6% had done so in the previous month. A quarter (24%) reported that they would use it for pain relief if they had access to it (Table 1).

Among those using cannabis for pain, the average pain relief they reported they obtained from using cannabis was 70% (where 100% meant complete pain relief). In contrast, the average reported pain relief they reported receiving from their medications was 50%. Of those who had used cannabis for pain relief, $n = 34$ felt that

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