

# Patients experiences of therapeutic cannabis consumption in New Zealand

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## Abstract

**Purpose** – This study aims to explore people's experiences of taking cannabis therapeutically and to gather some real-world evidence (RWE) about the products they were using, their efficacy and what kinds of positive or negative effect/s patients experienced. The focus of this discussion is the efficacy of cannabis for the participants in this study.

**Design/methodology/approach** – This was an exploratory study that used a mixed methods approach: a survey and semi-structured interviews. The data presented here focus on thematic analysis of five of the open-ended survey questions. Results from a purposive survey sample are also briefly reported. Interview data are not reported on here.

**Findings** – Across the sample (n = 213), 95.6% of participants reported that taking cannabis helped them with a number of conditions. The most common three themes across the thematic analysis were that cannabis helped with pain relief, sleep and anxiety. Negative effects, some of which related to having to source cannabis from the illicit market, were relatively minor and experienced by 28% (n = 58) of participants. An important finding was that 49% (n = 76) of those who said their use of prescribed medicines had decreased (n = 155), significantly decreased and in some cases stopped their use of prescribed medications.

**Originality/value** – This study reports on a sample of participants with clinically diagnosed conditions and adds to the RWE base about the efficacy of using cannabis for therapeutic purposes in the New Zealand context.

**Keywords** New Zealand, Accessibility, Cannabis, Efficacy, Therapeutic, Green Fairy

**Paper type** Research paper

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## Introduction

Cannabis has been used as a medicine for millennia with the first therapeutic use of cannabis [1] traced back over 5,000 years, used to treat pain associated with childbirth, rheumatic pain and malaria (Bains and Mukhdomi, 2022). In contemporary times, the rise of recreational cannabis use from the 1960s onwards was preceded at the beginning of the 20th century by a raft of prohibitive international drug control laws, as well as domestic legislation, including New Zealand's Dangerous Drugs Act 1927, which saw cannabis use criminalised along with use of other substances including opiates. The Misuse of Drugs Act 1975 (MoDA, 1975) further aligned New Zealand laws with the 1961 Single Convention on Narcotic Drugs, and the subsequent 1971 International Convention on Psychotropic Substances, to which New Zealand is a signatory (Dawkins, 2001). The latter designated cannabis as having no medical value. This hampered efforts to research and provide access to cannabis for those with a variety of ailments and conditions. However, since the 1990s, various US states alongside countries like Canada have legalised the use of cannabis for therapeutic purposes. California was the first state to legalise therapeutic cannabis in 1996 with Canada implementing a nationwide therapeutic cannabis programme in 1999 (Bains and Mukhdomi, 2022).

Cannabis was first made available in New Zealand for therapeutic purposes in 2010 although under strict guidelines – approval was required from the Minister of Health to prescribe. In

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2017, cannabidiol (CBD) products containing non-euphoric cannabis compounds were able to be prescribed more widely by general practitioners (GPs) without the approval of the Minister of Health – although approval was still required by the Ministry of Health to prescribe from 2017 until 2020. It took a further three years for products containing tetrahydrocannabinol (THC), the principal psychoactive cannabis compound, to be prescribed by GPs without government approval. The Misuse of Drugs (Medicinal Cannabis) Amendment Act of 2018 and the 2020 Medicinal Cannabis Scheme (MCS) should mean therapeutic cannabis products are available and accessible. However, access to cannabis for therapeutic purposes remains problematic in New Zealand because of the cost of prescribed cannabis products and the reluctance of GPs to prescribe them, due in part to scepticism about the efficacy of cannabis (Rychert *et al.*, 2021, 2020; Nutt *et al.*, 2020; Oldfield *et al.*, 2020), alongside the complex regulatory and compliance scheme accompanying the new 2020 regulations (Ministry of Health, 2022a, 2022b, 2022c; see Brown, 2021 for a discussion of these complexities). Furthermore, while a growing number of products have been made available under the 2020 scheme [2], they are expensive. This is due primarily to the regulatory regime that includes licencing fees (these can be in excess of NZD\$20k and must be renewed periodically) and stringent compliance requirements with significant financial burdens including security of cannabis production sites, quality compliance and product assessments (Ministry of Health, 2022b). These factors make it difficult for small producers and growers to enter the industry (Withanarachchie *et al.*, 2022). For example, the sublingual spray Sativex – the only product approved through phase three human trials – costs around \$1,000 per month, while herbal flower products are available to patients at costs similar to the top end of the illicit market, making them too expensive for those on limited incomes. Previous New Zealand research, using an anonymous online convenience survey, found fewer than 5% of respondents got their cannabis products via a GP, with most still accessing cannabis via the underground market or being gifted it by family or friends (Rychert *et al.*, 2020).

Despite these challenges, in New Zealand, there is a burgeoning desire among patients to explore the putative benefits of cannabis therapeutics, as well as some interest by physicians (Gulbransen *et al.*, 2020; Withanarachchie *et al.*, 2023). This is evident in data generated via the Ministry of Health's *New Zealand Health Survey*. The survey's 2015 cannabis use module identified that 42% of New Zealanders aged 15+ years who reported using cannabis did so for therapeutic reasons (Ministry of Health, 2015). Pledger *et al.*'s (2016) subsequent exploration of confidentialised unit record data from this survey found that medicinal use was associated with younger, lower decile males. While that study indicated Māori had the highest rate of therapeutic use, more recent published New Zealand patient surveys suggest much wider therapeutic consumption New Zealand Europeans also reported substantial levels of use, with chronic pain, anxiety and depression commonly described as conditions benefiting from cannabis, as well as more specific conditions such as endometriosis (Armour *et al.*, 2021; Rychert *et al.*, 2020).

One of the main reasons cited for the lack of support for cannabis among health professionals and reluctance of GPs to prescribe is lack of evidence of its efficacy (Rychert *et al.*, 2021; Sakal *et al.*, 2022; Nutt *et al.*, 2020). A number of scholars in this area have outlined evidence describing the varying efficacy of cannabis-based medicines in treating a variety of medical conditions. For example, Pratt *et al.* (2019, cited in Ruheel *et al.*, 2021) note there have been several randomised clinical trials (RCTs) examining the use of cannabis for treating conditions such as fibromyalgia, epilepsy, traumatic brain injury and neurological disorders. As Ruheel *et al.* (2021, p. 2) argue, there is:

Substantial evidence for the efficacy of MC [medicinal cannabis] in treating conditions including chronic pain and multiple sclerosis-related spasticity with conclusive or limited evidence for symptoms such as cancer-related nausea.

Other studies have also noted the efficacy of cannabis in treating chronic pain (Piper *et al.*, 2017; Pergolizzi *et al.*, 2018). A recent systematic review concluded that cannabis products containing THC and CBD may be associated with short-term improvements in chronic pain,

although side effects of dizziness and sedation were also noted (McDonagh *et al.*, 2022). The National Academies of Sciences, Engineering and Medicine (2017) found substantial evidence that cannabis is effective for the treatment of chronic pain and that it can also help with sleep disturbance, fibromyalgia and multiple sclerosis.

The widespread use and misuse of opioids in countries such as the USA and Canada alongside the thousands of deaths from opioid overdoses [approximately 200,000 between 1999 and 2018 (Arteaga and Barone, 2021)] suggests that a safer alternative is needed to treat chronic pain (Romero-Sandoval *et al.*, 2018). An important finding in therapeutic cannabis research has been that use of cannabis to treat chronic pain can reduce the use of opioid-based analgesics (MacCallum *et al.*, 2021; Okusanya *et al.*, 2020; Gittins and Sessa, 2020; Lucas and Walsh, 2017; Lucas *et al.*, 2019). There is also some evidence that therapeutic use of cannabis is linked to a reduction in opioid prescriptions and opioid related deaths (Wadesworth *et al.*, 2022), with Nutt (2022) noting that:

This impact is now seen at a population level – in US states where medical and recreational cannabis are widely used, deaths from opioid overdose have fallen.

However, notwithstanding the significant patient interest in cannabis, one of the problems around wider accessibility and availability of therapeutic cannabis remains the question of evidence and debates around its efficacy. For many people, e.g. doctors and other health professionals, RCTs remain the only standard of evidence that is accepted for therapeutic cannabis products, and evidence from RCTs in relation to cannabis products is limited (Schlag *et al.*, 2022). However, Schlag *et al.* (2022) argue for a more considered approach to gathering evidence around therapeutic cannabis use. They point to several limitations of RCTs for cannabis products such as those included in trials are not representative of the typical cannabis patient; efficacy is measured over a short timeframe; and the products used in RCTs may not be the same as those from the illicit market so important compounds may be missing from RCTs (Schlag *et al.*, 2022). Further problems in conducting RCTs with cannabis patients are that cannabis does not fit well with pharmacological models of research and drug development, and there is little potential for patents while RCTs are also very expensive to run. Without the promise of future commercial gains, pharmaceutical companies and other funding bodies are unlikely to support RCTs for therapeutic cannabis products (Schlag *et al.*, 2022).

To try and tackle this problem, Project Twenty21, a large observational therapeutic cannabis study in the UK, gathers “real-world evidence” (RWE) from those taking cannabis products for a number of therapeutic purposes ([www.drugscience.org.uk/twenty21/](http://www.drugscience.org.uk/twenty21/)). RWE is defined as evidence that “encompasses all forms of clinical data collected on patients outside of the traditional RCT [randomised controlled trial] setting” (Schlag *et al.*, 2022, p. 4). Schlag *et al.* (2022, p. 4) also argue that RWE is not the “poor cousin” to RCT but instead a valuable approach that can build a body of research evidence on issues such as therapeutic cannabis. It is argued to be a valuable approach for gathering evidence about therapeutic cannabis products that do not fit well with traditional pharmacological research models such as RCTs (Schlag *et al.*, 2022; Sakal *et al.*, 2022). There have also been recent global developments in relation to RWE and patient-reported outcomes (PROs) with the US National Institutes of Health developing new scales to measure PROs, alongside the European Medicines Agency launching a RWE database (Schlag *et al.*, 2022). The value of RWE and patient experiences is increasingly recognised as a valid approach to research in the field of therapeutic cannabis. Consideration of evidence outside of RCTs is necessary to gain a holistic and real-world view of the effectiveness, as well as any adverse effects, of taking cannabis for therapeutic purposes.

With this in mind, the aim of this article is to present the results of an exploratory, small-scale research project about the therapeutic use of cannabis in New Zealand, carried out from the end of 2021 through to September 2022. The research set out to gain an understanding of patient experiences of taking cannabis for therapeutic purposes and aimed to gather RWE

about its efficacy. The project was a collaborative one between academics, medical herbalists, patient advocates and a community health advocate.

## Methods and methodology

The aims of the project were to explore people's experiences of taking cannabis therapeutically, to gather some data about the quality of products that they were using, their efficacy and what kinds of positive or negative effect/s therapeutic cannabis participants had experienced. To address these aims, a project steering group was formed, consisting of a community health advocate, two patient advocates, two medical herbalists and two university-based researchers. A mixed methods approach was adopted, using a survey to recruit participants for semi-structured interviews, thereby enabling both quantitative and more in-depth analysis that gathered opinions and experiences from a diverse range of participants. Data from the 26 interviewees recruited via the survey will be reported in a subsequent paper as that analysis is beyond the scope of the present article.

An online questionnaire was developed using Qualtrics in consultation between the steering group and the university-based researchers. Questions were workshopped, with all members having input into survey design and research direction. Participants in the research were patients who had medically diagnosed conditions, e.g. chronic pain, anxiety and other conditions identified as prevalent within the literature ([Armour et al., 2021](#); [Rychert et al., 2020](#)). Prospective participants were recruited via two sources: people who were in contact with an established, experienced Green Fairy [3] to manage their health issues and also via a cannabis clinic based in Auckland, New Zealand's largest city, staffed by medically trained health professionals. Due to the size of the sample and concerns about confidentiality, the sample was combined for the purposes of analysis. This was, in part, to keep participants and the Green Fairy as anonymous as possible.

The survey was available online only, with a link emailed to directly to Green Fairy patients from a patient email list, and available to the cannabis clinic patients via a link on the clinic's website. The survey's 36 questions covered reasons for taking therapeutic cannabis; prior use (therapeutic and non-therapeutic); specific effects on patients symptoms; adverse events; changes in concurrent medications; access to therapeutic cannabis (including cost); impact of therapeutic cannabis use on family and affiliates; testing/quality control/dose of cannabis products; and demographics. At the survey's conclusion, participants were also offered the opportunity to participate in one-on-one interviews with the academic researchers (F.H. and G.N.). The study was approved by the Victoria University Human Ethics Committee (approval #29970).

## *Quantitative analyses*

Data were carefully screened for any inconsistencies or inaccuracies. Simple descriptive analyses were performed using SPSS v26 (IBM Corporation, Chicago, IL). Descriptive statistics were presented as means and standard deviations (for normally distributed data), or numbers and percentages (for categorical data). Missing data were reported and not replaced. Where appropriate, chi-squared tests of independence were performed to examine relationships between variables.

## *Qualitative analysis*

The survey had 18 open-ended questions allowing participants to elaborate on their yes/no answers using free text. Five of the free text open-ended question answers were analysed thematically. In discussion with the steering group, it was considered that one of the most useful parts of the survey was the data it contained about whether cannabis had been helpful (i.e. whether participants experienced health and quality of life improvements) and

respondents' experiences of positive and negative effects. Therefore, "helpful" is a broad term potentially open to interpretation, an acknowledged limitation of our survey.

The authors undertook separate thematic analyses, an important interpretive strategy, as all three contributors represent a different perspective on the data. F.H. is an academic researcher, G.N. is an academic and policy researcher with an expertise in cannabis. The third person involved in the thematic analysis is a community health advocate who is also a current PhD student at the University of Auckland (A.M.).

Guidelines about thematic analysis were developed by F.H., and the group then met online to discuss the process. Authors' independent thematic analyses included three "cuts" of the data, paring down to 3–4 key themes, i.e. those most frequently identified, for each question (see Supplementary Tables 3–5). Identified themes were then merged for each question, with the research team discussing and comparing their analyses, noting similarities, differences and important issues to be highlighted, with these finally collated by F.H. The final themes for each question were very similar, providing confidence in the analysis, and that the final themes were arrived at after a thorough and careful process.

## Results and discussion

The data presented in this section cover the survey results and a thematic analysis of five of the open-ended survey questions, which are presented under two main subheadings: survey results and thematic analysis results. The thematic analysis results section is broken down under three further subheadings: therapeutic consumption of cannabis – positive effects, therapeutic consumption of cannabis – negative effects, and therapeutic consumption of cannabis – decreased use of medication/s. As our aim in presenting these results is to explore people's experiences of taking cannabis therapeutically, its efficacy and what kinds of positive or negative effect/s participants had experienced, the analysis centres on what therapeutic cannabis products were used for and how they did or did not benefit participants, i.e. including reported adverse events. The survey results are reported briefly below although the focus of this discussion is the qualitative thematic analysis of the free text answers to the five open-ended questions.

### Survey results

After the data were cleaned to remove blank and invalid surveys, there were 213 valid surveys, including a small number with partial but sufficient answers to be included (i.e. the base number of answered questions may vary). Survey demographics are noted in [Table 1](#).

The use of cannabis sourced from the illicit market and/or from Green Fairies is an illegal activity, and as such some respondents were wary about participating. For example, five participants withdrew from the interviews citing concerns about confidentiality. The low number of responses in [Table 1](#) potentially reflects these concerns.

Across the sample, 95.6% ( $n = 197$ ) of participants reported that taking cannabis helped them. As [Table 2](#) demonstrates, a number of conditions or symptoms were alleviated through taking cannabis/cannabis products.

In the "other" category, participants reported multiple reasons for their therapeutic use of cannabis, including attention deficit hyperactivity disorder (ADHD), autism, post-traumatic stress disorder (PTSD), leukaemia, addiction to narcotics (sic), to aid recovery from serious injury, endometriosis, difficulty eating and post-viral fatigue/chronic fatigue syndrome.

The survey also covered whether participants had used cannabis non-therapeutically prior to taking it for therapeutic purposes. This question is important because a criticism often levelled at therapeutic cannabis research is that positive experiences are placebos based on what participants expect the effect to be due to previous experience with cannabis ([Gertsch, 2018](#); [Minerbi et al., 2019](#)). Overall, 55 participants (26.1%) said they had not

**Table 1** Survey demographic data (N = 53)

	Count	%
<i>Ethnicity</i>		
NZ European/Pākehā	36	67.9
Māori	7	13.2
Asian	6	11.3
Pacific	2	3.8
Other	2	3.8
<i>Age group</i>		
20–29	6	11.3
30–59	4	7.5
60–69	10	18.9
70–84	7	13.2
<i>Gender</i>		
Male	19	35.8
Female	33	62.3
Other (post-gender)	1	1.9

Source: Table by authors

**Table 2** Reason for taking therapeutic cannabis and whether it helped\* (N = 197)

Reason taking TC (can be more than one reason)	Count	% of sample	Helped (yes) (%)	
Specific medical condition, e.g. multiple sclerosis/epilepsy	60	29	54	90.0
Mental health issues, e.g. anxiety	93	45	91	97.8
Pain management	132	64	127	96.2
Difficulty sleeping	120	58	116	96.7
Other	40	19	39	97.5
Total	206	100	197	95.6

**Note:** \*The data are unable to show specifically which reason participants identified cannabis helped – just that they said it helped and these reasons were why they decided to take it (they could pick more than one)

Source: Table by authors

previously used cannabis recreationally, and  $n = 156$  (73.9%) said they had. When Question 3, whether participants had or had not previously used cannabis recreationally, is compared with Q9, “Did cannabis/cannabis products help you?”, there is no statistically significant difference between those having previously used recreationally and those who had not [ $\chi^2(1,206) = 0.285, p = 0.59$ ]. There is also no statistically significant difference between those who had or had not previously used cannabis recreationally and Question 11, whether they had experienced positive effects from taking cannabis/cannabis products [ $\chi^2(1,206) = 0.092; p = 0.76$ ].

However, when Question 3, those who had or had not used cannabis before, is looked at in conjunction with Question 11, experiences of negative effects, there is a statistically significant difference between responses [ $\chi^2(1,206) = 6.316; p = 0.012$ ]. Slightly over 14% of those who had not used cannabis before reported negative effects compared with 32.7% of those who had used cannabis previously. The latter, therefore, reported more negative effects. In addition, those with pre-existing anxiety reported slightly higher negative effects (32.3%) than participants with pain (28.6%) or difficulty sleeping (28.9%).

The thematic analysis discussed below provides more detail about respondents' perceived efficacy of cannabis alongside the positive and negative effects of taking it therapeutically, as well as participants' reported decreased use of prescription medicines.

### ***Thematic analysis results***

As described, a thematic analysis was undertaken of the open-ended questions in the survey. The questions analysed were as follows:

- Q10. Can you explain why cannabis products did or did not help you therapeutically?

(Follows the question “did using cannabis/cannabis products help you therapeutically?” which required a yes/no answer)

- Q12. Can you please explain what these positive effects were?

(Follows the question “were there any positive effects from using cannabis/cannabis products therapeutically?” which required a yes/no answer)

- Q14. Can you explain what the negative effects were?

(Follows the question “were there any negative effects from using cannabis/cannabis products therapeutically?” which required a yes/no answer).

- Q16. Can you please explain what these unexpected positive or negative effects were effects were?

(Follows the question “were there any unexpected positive or negative effects from using cannabis/cannabis products therapeutically?” which required a yes/no answer). Question 16 was divided into 16a (unexpected positive effects, UPE) and 16 b (unexpected negative effects, UNE) for analysis.

- Q29. Yes, decreased – please add any further info in the box below

(Follows the question “has your use of prescribed medicines such as Tramadol/sleeping pills changed e.g., decreased/increased after cannabis consumption for therapeutic purposes?” which required participants to answer either yes, increased/yes, decreased/no) [4].

### ***Therapeutic consumption of cannabis – positive effects***

The most common themes for therapeutic efficacy were pain relief, helped with sleep and helped with anxiety. Other therapeutic advantages for cannabis included calming racing thoughts, and a reduction in other medications’ side effects, while having no side effects itself. In terms of specific positive effects, the analysis identified pain relief, sleep, anxiety, calm and general mood improvement as the key positive effects for participants in this study.

Positive effects that were unexpected, i.e. not the main reason why people started taking cannabis therapeutically, were improved moods, reduced anxiety and pain relief. These were *in addition to* the initial reason/s participants started using cannabis therapeutically.

The analysis demonstrates that taking cannabis helps participants in a number of ways, with pain relief noted as the most common theme across the thematic analysis. It is also likely, although not necessarily a given for all participants, that pain relief, sleep and anxiety/calmness are closely linked. For example, if pain is helped, then participants may sleep better and have less anxiety or feel calmer. That cannabis products give pain relief which then can have a holistic effect across other problems is an important finding from this project, as the following survey responses note:

In control of pain symptoms allowing me to live a life with purpose and meaning.

It helps me get to sleep and have mostly pain free days.

Helped me with pain management and getting quality sleep.

Helped with energy, moods and pain.

Also important in the thematic analysis was that specific conditions, e.g. seizures, chemotherapy side effects and cancer treatment, were noted as improving, sometimes dramatically, after the use of cannabis products:

Significantly reduced my son's seizures, from 200 seizures a week to 3 or 4 a month.

Helped with pain from migraines without the side effects of opioids.

I believe it suppressed the side effects of my chemo.

I believe the oil has had a positive effect on my cancer markers [...] 13,000 odd at the start and at last count they were only 4.8.

Although they have low representation in coding, likely due to a broad survey approach and rare conditions, this is noteworthy, and further research is needed to explore the efficacy of cannabis in relation to these serious and chronic conditions.

Therapeutic cannabis's lack of side effects was a key finding from this project and was a prominent theme in the analysis (see Supplementary Table 3). Other significant issues that were noted by participants centred on general well-being indicators, family relationships being improved, energy levels improving and quality of life improving, sometimes significantly, for some people:

[Cannabis] Helps with literally everything. Every issue I had has been resolved by using cannabis [...] eat without feeling sick, sleep better. Helps me calm down when I'm stressed. Because it has done all these things I am feeling less depressed, even though I have been struggling with depression for years. Its improved my life so much.

PTSD and trauma were also noted by a small number of participants as something that cannabis products helped with. Ongoing research around cannabis and PTSD has explored the use of therapeutic cannabis and synthetic cannabinoids in those with PTSD ([Orsolini et al., 2019](#)), as well as the use of cannabis for sleep issues among those who suffer from PTSD ([Bonn-Miller et al., 2013](#)).

UPE of taking cannabis products that were identified by the thematic analysis were improved moods, helped with anxiety and felt calmer, and pain relief, with one person noting that cannabis gave them relief from the "broken glass feeling in my joints". However, what was also notable here was that participants were amazed how quickly cannabis products worked and how effective they were:

Was not expecting such a big change, as someone with multiple mental health diagnoses, I have never experienced the kind of stable, joyful mental state I now experience on the daily.

Again it is likely that for some participants these themes are linked, and that improved moods, feeling calmer, feeling less anxious are due to chronic conditions and pain being helped which then has a flow-on effect. Some participants' comments demonstrate the extent to which cannabis has helped them:

Helped with my stress and anxiety and depression and most importantly pain relief. It saved my life.

It helped with my pain immensely and helped with my sleep – it was a life saver as I was ready to finish my life before that. I had had enough.

The sample of participants represented in this analysis appear not to have had success with conventional medicine so there is a real need, underlined by the results presented here, for effective alternatives for some patients to be accessible and affordable.



### ***Therapeutic consumption of cannabis – negative effects***

While participants identified a large number of positive effects from taking cannabis, negative effects were also reported (see Supplementary Table 4).

There were fewer negative effects and UNE of taking cannabis products in comparison to the positive and UPEs identified by participants. Overall, broadly two types of adverse events were identified, those that were due to the effects of cannabis products, e.g. dizziness, cognitive impairment and those that were related to the variability of products largely sourced from the illicit market.

Identified negative effects included dose management, cognitive impairment and concerns related to the illicit market. For most of the negative effects identified, e.g. dose management, paranoia and effects such as dizziness and fatigue, these were alleviated by changing the dosing time or altering the combination of THC and CBD in specific products. For some of these themes, accessing via the illicit market meant that dose management could be an “experiment” as one participant noted:

As an illegal user, dosing is variable. Thus, the negative effects were having to allow multiple hours of downtime if a dose was too strong.

Accessing via the illicit market was also stressful for some and meant that participants were concerned about being drug tested, both at work and while driving, although those that noted driving impairment said that they would not drive if they felt impaired:

Until I got the dosage right, I didn't feel able to drive which limited me. I have ended up only taking it in the evening, thus minimizing any negative impact.

Participants also stated that they felt like “criminals” due to prohibition, and one person stated that they were stigmatised by their family and friends for taking cannabis products that were not legal. Other participants responded that negative effects included:

Being a social outcast

Being judged by my parents

Being a criminal for buying

The stigma behind it

For those that accessed products on the illicit market, this presented problems, as one participant noted they got:

Anxious and stressed when I couldn't access cannabis or was worried about the quality.

### ***Therapeutic consumption of cannabis – decreased use of prescription medication/s***

As noted earlier, weaning off prescription medication, decreasing or in some cases stopping use of prescription medication/s entirely was explored in the analysis. As this is an important issue that has been also identified in the literature (Armour *et al.*, 2021; Nutt, 2022), the survey for this project asked specific questions around prescription medication and whether the use of cannabis products meant use of prescribed medicines increased, decreased or stayed the same. The thematic analysis focused on the key themes in participants' expanded comments around decreasing or stopping use of prescribed medication/s (see Supplementary Table 5). Stopping use of all medications was the top theme across the thematic analysis [i.e. 49% ( $n = 76$ ) of the 155 participants answering this question had stopped or reduced other prescription medications]. Of 167 participants asked about other medications, 50.9% ( $n = 85$ ) reported they were currently taking prescribed medicines apart from cannabis. These ranged from analgesics,

including tramadol, pregabalin and codeine, to sleeping pills and other medications, such as diazepam, amitriptyline and lorazepam; one participant even responding “too many to list”.

This is an important finding that participants in our study in some cases were able to stop completely the use of (mainly) opioid-based medications. These prescribed medicines often have debilitating side effects such as nausea, as well as providing serious risk of dependence and cognitive impairment:

I had forgotten what it was like to feel, to be me, I have gained that back and no longer feel reliant on pharmaceuticals.

Coming off pharmaceuticals that had side effects and made me feel like I wasn't me. Having that feeling back and emotion has been a game changer for me. I can't praise CBD oil highly enough.

I was on heavy duty prescribed opioids and steroids that left me feeling exhausted and didn't ease the pain at all. Once on the cannabis oil I was able to wean off everything and just use cannabis oil.

In the past I have been prescribed different drugs for pain management including tramadol, morphine, OxyContin and oxycodone. I don't like the mental effects of these drugs and they often make me nauseous. I'm also very aware of the addictive nature of these drugs. I now don't use any of them.

The medications listed that participants stated they no longer used or decreased use of includes tramadol, sertraline, Zyban, anti-depressants (not specified), pregabalin, steroids, lorazepam, amitriptyline, venlafaxine, painkillers (not specified), gabapentin, voltaren, Sevredol, melatonin, Sudafed, prednisone, oxycodone, codeine, ibuprofen, ADHD medication (not specified), Naproxen, morphine, oxycontin, zopiclone, diazepam, Panadeine, fast-acting opioids (not specified), sleeping pills (not specified). As one participant notes taking cannabis meant that:

I have completely stopped these meds: 75mg Pregabalin: 1 tablet, 3 times a day, 50mg Tramadol: 1-2 tablets, up to 3 times daily, 10mg Sevredol: 1-2 tablets when pain is severe.

The side effect profile of pharmaceutical prescription drugs can be problematic, and as [Pauwels et al. \(2011\)](#) note, drug side effects are a major public health concern, the main reason why new pharmaceutical products fail to get approval or get withdrawn from the market. Due to the low side effect profile of cannabis and that most of the adverse effects noted were relatively minor and easily addressed, cannabis products appear to be a good choice for those with chronic conditions who have had limited success with conventional medicine. Our analysis indicates that cannabis products have a favourable side effect profile, relative to pharmaceuticals for our participants, and that they have the potential to effectively help those who have pain-related (and other) conditions (see also [Armour et al., 2021](#); [Pratt et al., 2019](#); [Ruheel et al., 2021](#); [Piper et al., 2017](#); [McDonagh et al., 2022](#); [Rychert et al., 2020](#)).

## Discussion

As with all research, there are some limitations to the methods used gather data. The sample was purposive with a specific population being targeted – those with medically diagnosed conditions that used either a Green Fairy or a legal cannabis clinic to obtain cannabis/cannabis products. This also means that there could have been a bias towards positive feelings or experiences with using cannabis therapeutically. However, the survey also asked about negative effects from using therapeutic cannabis or cannabis products to try and gain a balanced view, and what emerged from the analysis were largely positive experiences. The sample is therefore not representative of all those who use cannabis therapeutically in New Zealand, and the results cannot be generalised to wider populations. The study was small scale, and after cleaning the final sample was 213 people. However, the study was exploratory in nature and aimed primarily to gather participants' experiences of taking cannabis therapeutically, and in particular to identify whether cannabis had positive or negative effects on the health problems they suffered from. As such the information gathered for this study contributes to the RWE base around therapeutic use

of cannabis in the New Zealand context and provides a useful starting point for further research (see [www.drugscience.org.uk/twenty21/](http://www.drugscience.org.uk/twenty21/)).

Despite these limitations, the study demonstrates that this sample of therapeutic cannabis users found that cannabis helped with a number of conditions. The three most commonly cited effectively managed symptoms were pain, sleep and anxiety. International research also notes that cannabis can be effective in treating pain, sleep disturbance as well as conditions like epilepsy and multiple sclerosis (Pratt *et al.*, 2019; Piper *et al.*, 2017; Pergolizzi *et al.*, 2018; McDonagh *et al.*, 2022), with New Zealand research noting pain, sleep and mental health conditions as the three most common reasons for taking therapeutic cannabis (Armour *et al.*, 2021; Rychert *et al.*, 2020; Gulbransen *et al.*, 2020). In addition, “Project Twenty21” found pain to be the most common condition cannabis was taken therapeutically, followed by anxiety disorders (Sakal *et al.*, 2022). This exploratory study adds to this RWE base. Coupled with international and previous New Zealand research (Rychert *et al.*, 2020; Armour *et al.*, 2021), the largely positive experiences of our participants may give GPs and other New Zealand health professionals some confidence that cannabis products could be helpful for their patients.

Furthermore, an important finding in this study, also found in the wider international literature, was that participants either decreased or stopped their use of prescribed medicines, many of which were opioid based. The quotes from the thematic analysis around this issue provide powerful evidence that prescribed medications other than cannabis often had severe negative side effects for participants. That cannabis has a low side effect profile in comparison to many prescribed medications and that a safer option than opioids is needed (Romero-Sandoval *et al.*, 2018), cannabis could offer those with chronic, long-term conditions a more effective and safer alternative. If health practitioners offered cannabis to those with pain, then this could be a relatively low risk option to start treatment with, rather than prescribing opioids and other types of painkillers, with multiple side effects and limited efficacy (Strulik, 2019; Zhang *et al.*, 2022; Yu *et al.*, 2022; Greis *et al.*, 2022) in the first instance. Similarly with sleep and anxiety issues, cannabis could be a good first option for some patients rather than going straight to sleeping pills like diazepam and anti-depressants.

Alongside our argument that cannabis may be a good alternative to start with, we also acknowledge that people seek health care through multiple channels and that prescribed medicines such as opioids can be beneficial or necessary for some people. However, as Bains and Mukhdomi (2022) note, the treatment of chronic pain is highly complex and benefits from a holistic approach, and we are not suggesting that the choices for patients or practitioners should be an “either/or” decision – *either* cannabis *or* prescribed medications. There is a place for both approaches with the results of the present study, suggesting that cannabis products could have a role in treating patients with chronic pain and other conditions refractory to treatment by conventional means. Having an affordable and widely accessible MCS is of the utmost importance, not least because of the variable quality of products found on the illicit underground market (Raymond *et al.*, 2021), with variability likely contributing to some of this study’s reported negative effects. A properly regulated therapeutic cannabis market, accessible and affordable for all, would help to eliminate these issues.

A properly regulated market as noted above could be particularly effective in reducing harm. For example, several participants noted harm through smoking cannabis with and without tobacco, although this can be remedied by using alternative methods of consuming cannabis products. However, current NZ legislation covering the use of vaporisers reflects barriers to the application of a harm reduction approach to the consumption of medicinal cannabis, with significant compliance regulations exacerbating difficulties to accessing equipment and increasing the expense of devices for suppliers (Smokefree Environments and Regulated Products Regulations, 2021).

Participants did note alternative ways of consuming cannabis including oral administration and topical application. That alternatives to smoking are available via the legal and illicit market is positive, and harm reduction information around ways to consume cannabis may be usefully distributed via Green Fairies, if they are not already providing alternative products to their patients. However, trying to reduce harm by responding to patient requests for products that do not have to be smoked, e.g. balms and oil extracts, adds another layer of risk for Green Fairies in terms of criminalisation. In offering products containing a cannabis concentrate, legal penalties move from Class C to Class B under the 1975 MoDA, becoming more severe. The 1975 MoDA is also problematic because in the eyes of the law there is no difference between compassionate providers such as Green Fairies and those engaged in illicit transactions based solely on a monetary transaction. There has been a homogenising of the supply world which is much more nuanced than the law would allow.

Testing of cannabis products is now possible in New Zealand under recently introduced legislation [Misuse of Drugs (Drug and Substance Checking Service Providers) Regulations; [Ministry of Health, 2022d](#)] which provides some reassurance for those who use cannabis therapeutically. However, the only “official” cannabis product (Sativex™) remains unfunded by Pharmac (NZ’s drug funding agency) making it unaffordable for most people. Decriminalisation of the use, possession and cultivation of cannabis for medical purposes would go some way to allowing those with painful chronic conditions to consume a plant-based product with few side effects that they find effective. Stigma exacerbated by prohibition remains a barrier in relation to therapeutic cannabis access ([Withanarachchie et al., 2022](#)). Although current New Zealand legislation is developing, a sense of urgency is needed as well as more creative, effective solutions for those who would benefit from taking cannabis therapeutically. For example, as [Withanarachchie et al. \(2022\)](#) suggest, low-risk CBD products could be accessed via pharmacies, as they are in Australia, removing the access barriers associated with the current prescription-only system (see Australian Government, Department of Health and Aged Care, 2020).

Such alternative solutions are necessary if New Zealanders’ right to health and well-being is to be upheld. The right to health encompasses not just the absence of disease or infirmity but “complete physical, mental and social wellbeing” [Human Rights Commission (HRC), 2010, p. 153]. In addition, the International Covenant on Economic Social and Cultural Rights refers to the “right to the enjoyment of the highest attainable standard of physical health” (cited in [HRC, 2010](#), p. 154), which has been ratified by the New Zealand government, suggesting an obligation for compliance. The right to health is also protected by the New Zealand Bill of Rights Act (1990). Cannabis, as demonstrated in this study, supported by international literature, can go some way to alleviating both physical conditions as well those such as anxiety and depression ([Piper et al., 2017](#); [Pergolizzi et al., 2018](#); The [National Academies of Sciences, Engineering and Medicine, 2017](#); [Häuser et al., 2018](#)). That this option is not freely available to all who may need it deprives those, some with serious debilitating conditions, of the opportunity to attain mental and physical well-being and to enjoy the highest attainable standard of physical health.

## Conclusion

Taking cannabis therapeutically for this New Zealand sample appeared beneficial on a number of levels. Further research into the use of cannabis may reassure policymakers, government agencies and health professionals that expanding the accessibility of cannabis for therapeutic purposes could be advantageous. Exploring viable ways to incorporate Green Fairies into health settings, while removing criminal penalties for providing medicinal cannabis, should be sought to remove stigma towards and barriers to accessing a medicine that provides relief from chronic and painful conditions. The

recently introduced drug-checking legislation (Ministry of Health, 2022d) could provide a pathway to incorporating Green Fairies while at the same time eliminating concerns about the quality of their cannabis-based medicines (Raymond *et al.*, 2021). The authors are aware of at least one potential drug checking provider who, at the time of writing, was preparing a licence application solely for checking cannabis-based medicines.

Patients' experiences and voices should not be discounted because they are not part of RCTs, especially given the limitations of RCTs in relation to cannabis (Schlag *et al.*, 2021; Nutt, 2022; Piper *et al.*, 2017). The value of RWE, increasingly recognised internationally, needs to be incorporated into discussions around the future of therapeutic cannabis consumption.

## Notes

1. We define the term therapeutic use of cannabis/therapeutic cannabis for the purposes of this paper as use of cannabis or cannabis products to facilitate a reduction in symptoms such as sleeplessness, seizures or pain.
2. Twenty-five at the time of writing (Ministry of Health, 2022a). In New Zealand, approved medications are those that have undergone clinical trials, including RCTs involving humans. These medications are approved by the NZ medicines regulatory body, Medsafe. For cannabis-based medicines, only the sublingual spray Sativex™ is approved. However, section 29 of the Medicines Act 1981 (Medsafe, 2020) allows registered medical practitioners to prescribe non-approved medications that have not undergone clinical trials. For cannabis-based medicines, this includes a number of herbal and oral liquid products that have been assessed as meeting the minimum quality standards as set out in the Misuse of Drugs (Medicinal Cannabis) Regulations 2019 (Ministry of Health, 2022c).
3. The term "Green Fairy" refers to those who grow cannabis illegally and provide therapeutic cannabis or cannabis products. The nature of the illicit market and the diversity of expertise among green fairies means that cannabis products sourced from the illicit market may be of variable quality (Raymond *et al.*, 2021) and that "patients" may not always receive informed health advice.
4. As only 9.03% of participants ( $n = 14$ ) stated their use of prescribed medicines such as Tramadol increased, we focused on the participants who noted their use of prescribed medicines decreased (49.03%,  $n = 76$ ). A further 41.93% ( $n = 65$ ) stated that their use of prescribed medicines had not changed ( $n = 155$  responses were received for this question).

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### Further reading

New Zealand Government (2022), "New Zealand Legislation. Misuse of drugs (drug and substance checking service providers)", Regulations 2022, available at: [www.legislation.govt.nz/regulation/public/2022/0093/latest/LMS666170.html](https://www.legislation.govt.nz/regulation/public/2022/0093/latest/LMS666170.html)

### Supplementary materials

Supplementary materials of this article can be found online.

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