

MIGRAINES

Clinical Summary

Migraines & Headaches



Photo by Robina Weermeijer on Unsplash

Migraine is a disorder characterized by pulsating headaches, often presenting with nausea, vomiting, photophobia, or phonophobia¹. With each episode lasting from a few hours to several days and its resulting impact on the activities of daily living,¹ finding an effective treatment is crucial to restoring quality of life. Currently, simple analgesics (e.g. acetaminophen and nonsteroidal anti-inflammatory drugs) and triptans are used as first-line treatments depending on the symptom severity.² Other medications, such as ergots and antiemetics may also be used in select patients.² Research has shown that endocannabinoid dysfunction may be implicated in migraine pathophysiology. The cerebrospinal fluid of patients with migraine contains decreased levels of the endocannabinoid anandamide.³ Also, decreased expression of the *cnr1* gene encoding the cannabinoid receptor type 1 is associated with migraine.³

Therefore, medical cannabis (MC) may effectively abort migraine attacks by complementing the endocannabinoid system. There are a few studies demonstrating the benefit of MC in migraine treatment. One study examined the effects of MC on migraine by analyzing dataset that patients had entered on Strainprint, which is a mobile app that helps MC users to track changes in disease symptoms.⁴ Over a 16-month period, MC reduced migraine severity 88.1% of the time (table 1), and the mean migraine severity rating decreased by 50% (from 6.65 to 3.30).⁴

Table 1 Changes in symptom severity

Symptom	% Sessions Symptom Reduction	% Sessions Symptom Exacerbation
Headache	89.9%	2.4%
Migraine	88.1%	3.1%

% Sessions No Symptom Change	Baseline Severity Rating	Post-cannabis Use Severity Rating
7.7%	M = 5.79 SD = 1.81	M = 2.74 SD = 1.88
8.8%	M = 6.65 SD = 2.08	M = 3.30 SD = 2.43

Abbreviation: M, mean; SD, standard deviation.

Table 1 Adapted from Short- and Long-Term Effects of Cannabis on Headache and Migraine by Cuttler, C., Spradlin, A., Cleveland, M. J., & Craft, R. M. The journal of pain : official journal of the American Pain Society, 21(5-6), 722-730. (2020).⁴

Even with repeated MC use, there was no significant change in baseline migraine severity, which is encouraging given that about 15% of patients on conventional migraine medications develop medication overuse headache.⁴ Additionally, a retrospective, observational chart review of migraine patients at a US-based private medical practice showed that MC decreased migraine frequency in 85.1% of the patients.⁵ The mean number of migraine headaches per month decreased from 10.4 at the initial visit to 4.6 at the follow-up appointment.⁵ These studies show that MC may effectively decrease migraine severity and frequency in migraine patients.

Analysis of self-reported outcomes of Israeli patients with MC license for migraine treatment revealed that more than 60% of the patients achieved a 50% or greater reduction in the monthly frequency of migraine attacks following MC treatment initiation.⁶ They also reported lower negative impact from migraine and lower use of conventional migraine medications, such as opioids and triptans.⁶ About 40% of the patients reported less than 50% reduction in the monthly migraine frequency following MC treatment initiation, which led the researchers to define them as "non-responders".⁶



Migraines & Headaches

However, if a patient is receiving little benefit or experiencing bothersome side effects from conventional migraine medications, navigating MC to find a product that works may still be a promising course of action.

Harvest Medicine patients self-reported outcomes shows that 84.77%, of 1044 patient respondents, have experienced a very positive or somewhat positive impact on their quality of life. While only 0.90% patients reported a negative or very negative impact on their quality of life (figure 1).⁷

Despite these positive results, it is important to understand that not everyone will respond to MC. Users of Strainprint reported that MC actually led to worsening migraine symptoms 8.8% of the time.⁴

Also, although these studies did not directly report any adverse effects of MC, studies looking at MC use in other disease settings reveal that somnolence, amnesia, cough, nausea, dizziness and euphoric mood are adverse effects most likely or certainly related to MC use.⁸ Therefore, it is important for patients seeking migraine

symptom relief with cannabis, to consult a healthcare professional and find the most appropriate cannabinoid-based treatments for their migraines.

-Harvest Medicine 2021
& Kang, A., University of Toronto
Pharmacy Intern 2021

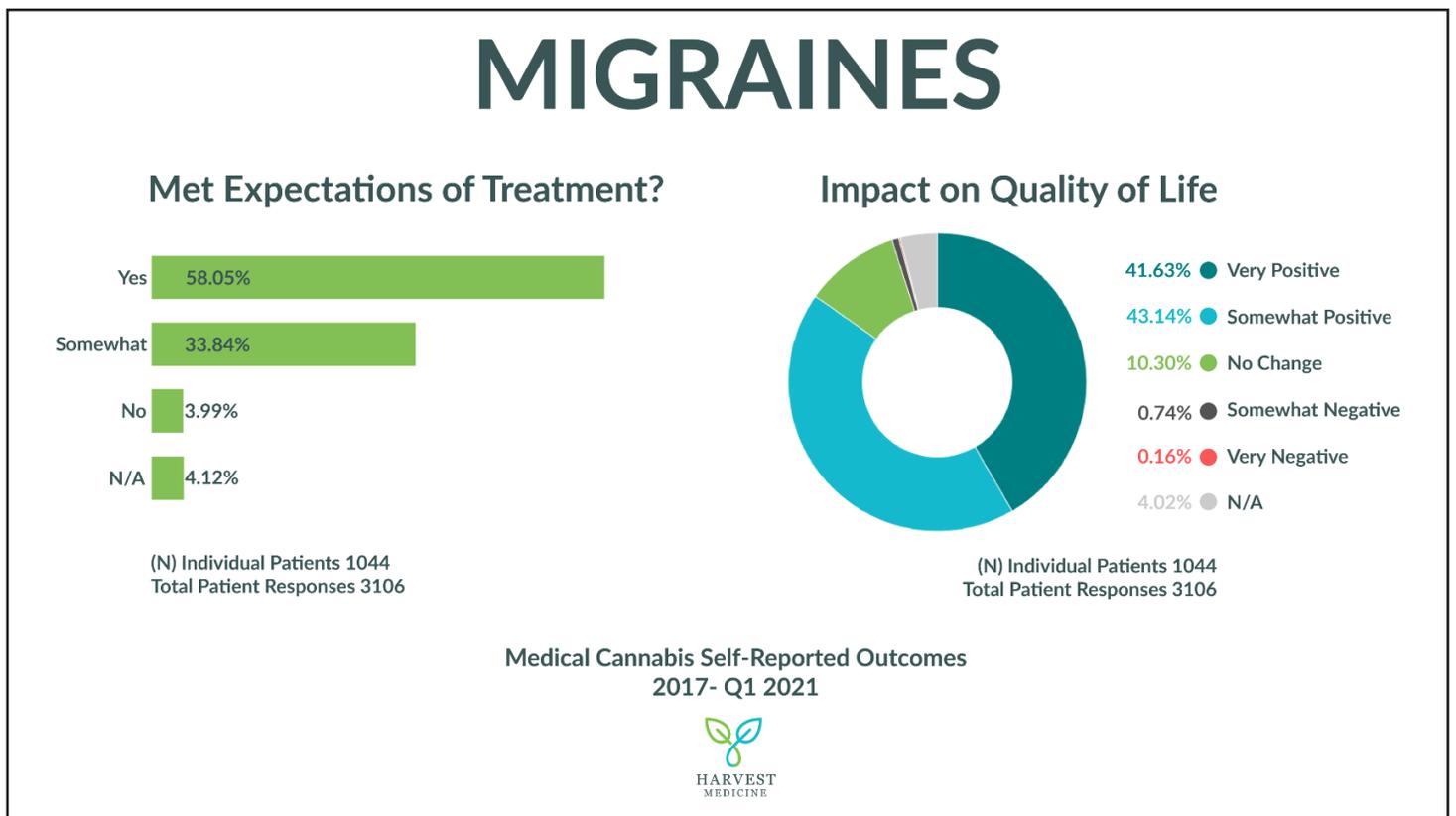


Figure 1 Harvest Medicine. (2021). Migraine patient self-reported outcomes⁷



HARVEST
MEDICINE

hmed.ca / 1-844-488-4633

References

1. Ramage-Morin, P. & Gilmour, H. (2014). Prevalence of migraine in the Canadian household population. Statistics Canada, Retrieved January 5, 2021 from <https://www150.statcan.gc.ca/n1/en/pub/82-003-x/2014006/article/14033-eng.pdf?st=4yXniTbG>
2. Mayans, L. & Walling, A. (2018). Acute Migraine Headache: Treatment Strategies. American Association of Family Physician, 97(4), 243-251. Retrieved January 2021 from [Acute Migraine Headache: Treatment Strategies - American Family Physician \(aafp.org\)](#)
3. Lochte, B. C., Beletsky, A., Samuel, N. K., & Grant, I. (2017). The use of cannabis for headache disorders. Cannabis and Cannabinoid Research, 2(1), 61-71. [10.1089/can.2016.0033](https://doi.org/10.1089/can.2016.0033)
4. Cuttler, C., Spradlin, A., Cleveland, M. J., & Craft, R. M. (2020). Short- and Long-Term Effects of Cannabis on Headache and Migraine. The journal of pain: official journal of the American Pain Society, 21(5-6), 722–730. <https://doi.org/10.1016/j.jpain.2019.11.001>
5. Rhyne, D.N., Anderson, S.L., Gedde, M., and Borgelt, L.M. (2016, January 9). Effects of Medical Marijuana on Migraine Headache Frequency in an Adult Population. Pharmacotherapy. Retrieved January 2021 from <https://doi.org/10.1002/phar.1673>
6. Aviram, J., Vysotski, Y., Berman, P., Lewitus, G. M., Eisenberg, E., & Meiri, D. (2020). Migraine Frequency Decrease Following Prolonged Medical Cannabis Treatment: A Cross-Sectional Study. Brain Sciences, 10(6), 360.
7. Harvest Medicine. (2021). Migraine patient self-reported outcomes. Update retrieved, May 2021, from <https://hmed.ca/patient-outcomes/>
8. Ware, M. A., Wang, T., Shapiro, S., Collet, J. P., Boulanger, A., Esdaile, J. M., ... & O'Connell, C. (2015). Cannabis for the management of pain: assessment of safety study (COMPASS). The Journal of Pain, 16(12), 1233-1242.

