

The Use of Medical Cannabis in the Treatment of Neuropathies

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Objective & Study Design

Objective
 The purpose of this study is to assess medical cannabis' (MC) efficacy, reported adverse effects (AE), and dosages used in the treatment of patients with Neuropathies.

Study Design
 A retrospective chart review analysis was conducted on 923 patients, of which 503 met our inclusion/ exclusion criteria. Patients diagnosed with neuropathy and who were currently being treated with MC through New York State's Medical Marijuana program were included in our analysis. All patients utilized MC from a NYS dispensary for at least one month and were followed at an outpatient, tertiary neurologic facility in Buffalo, NY. Electronic health records of patients were reviewed for the following information: patient-reported efficacy, MC dosing, opioid pain medications, neuropathic pain medications and Adverse events (AE's).

Inclusion/ Exclusion

- Certified for New York State MC by UCNS board certified physicians or their nurse practitioner/physicians assistant team.
- Reported at least one month of MC treatment
- At least 21 years of age
- Sufficient clinical documentation

Subjects

- 503 patients diagnosed with neuropathies and were certified for MC
- 50.70% were female, 49.11% were male
- Patients were excluded due to lack of follow-up, inability to initiate MC treatment or insufficient clinical documentation
- The average age was 60.09 years old, with ages ranging from 22 to 90 years old

Study Population

- 503 patients met inclusion criteria and initiated MC treatment
- Reasons for failure to initiate MC treatment included:
 - Financial barriers
 - Employment restrictions

Approved by the Western Institutional Review Board (WIRB)

Results

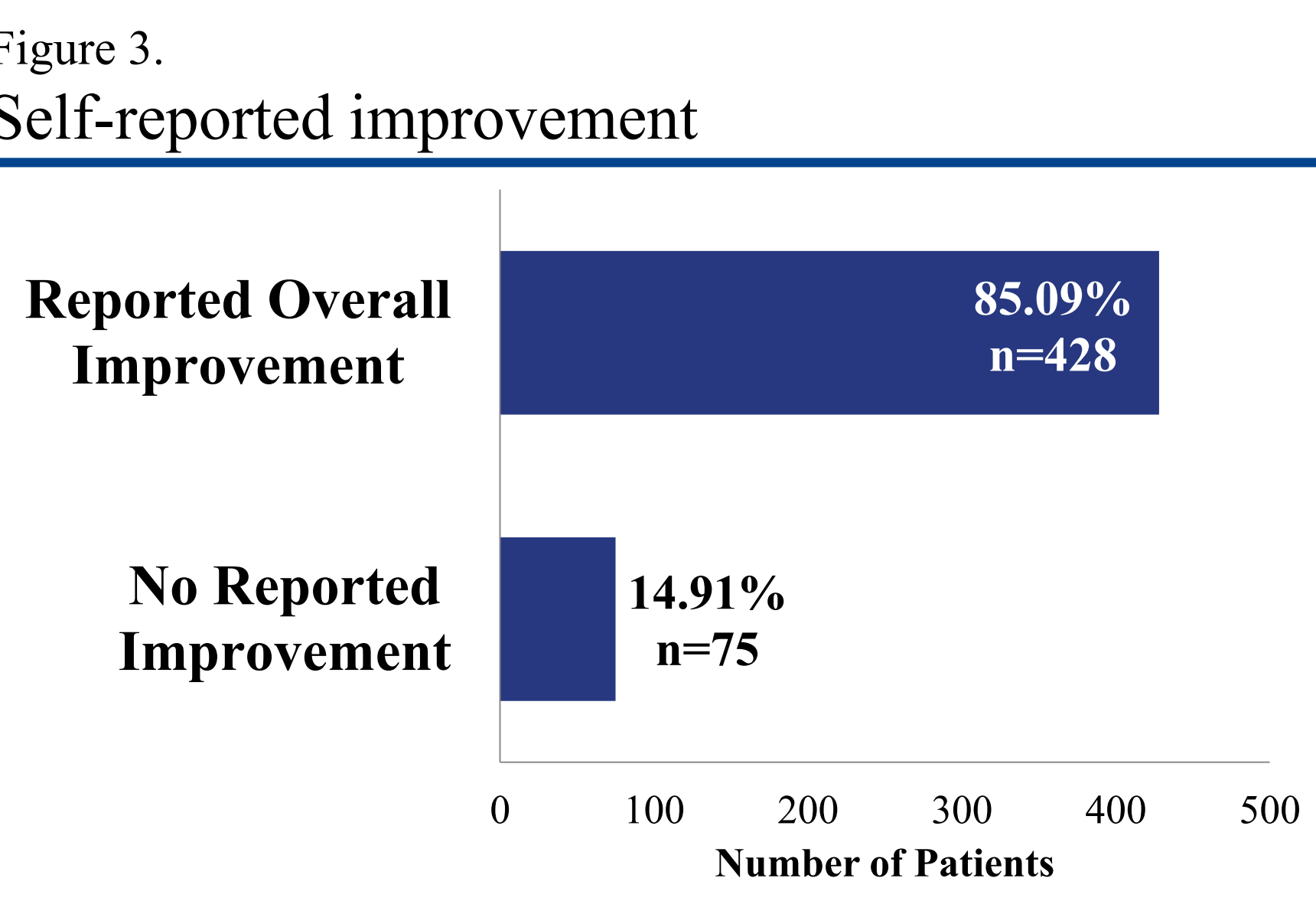
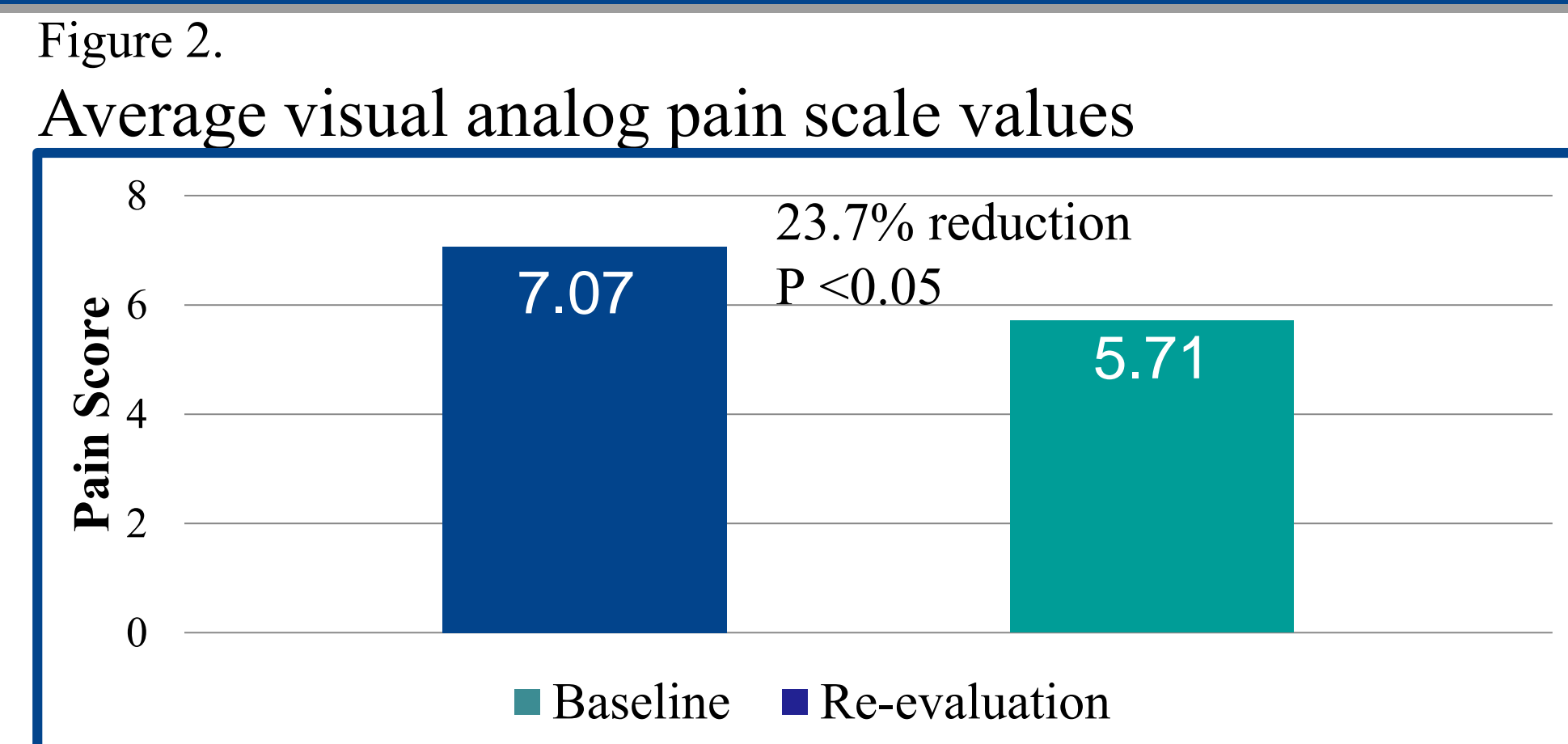
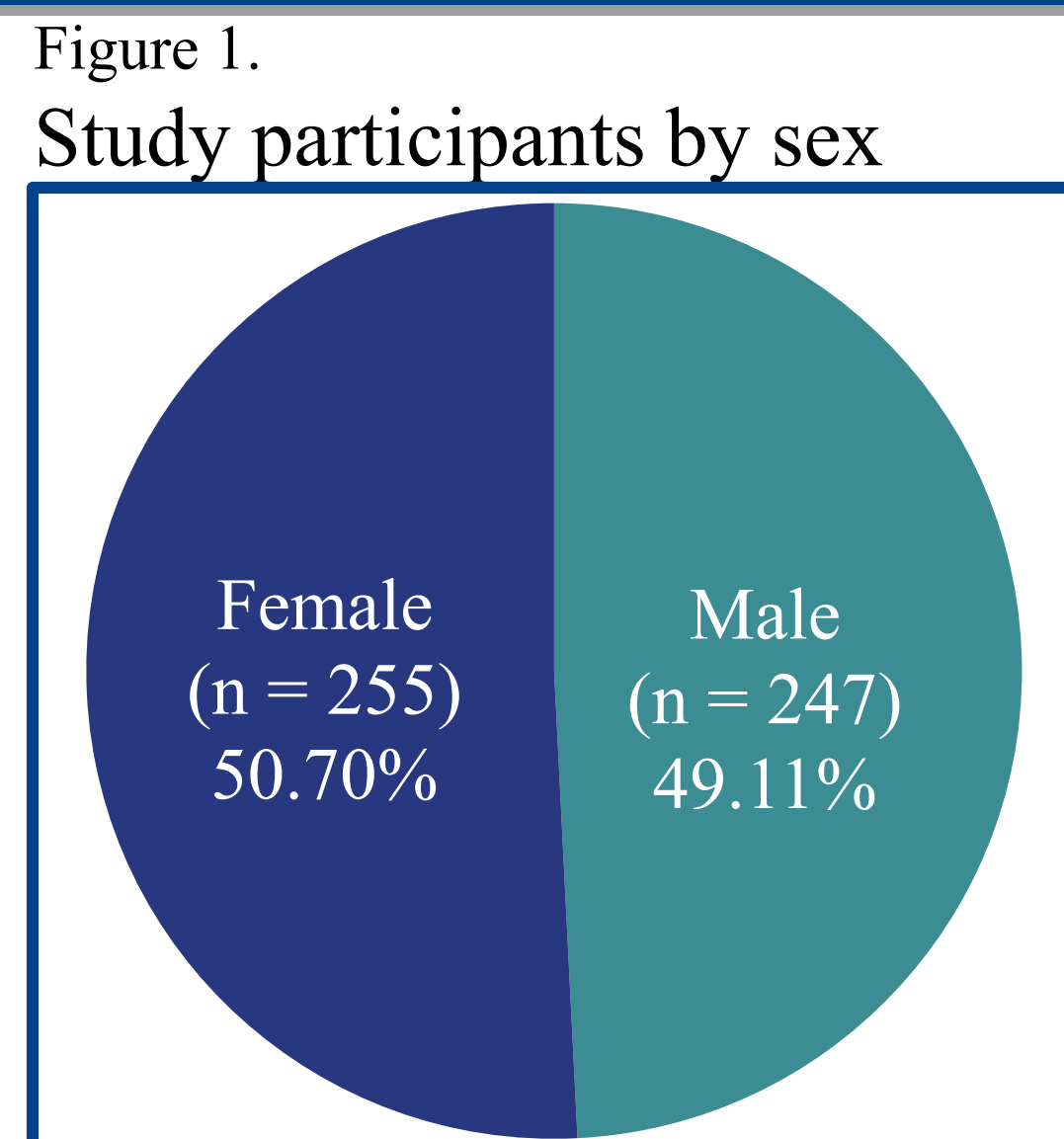


Figure 4. Self-reported improvement profile

Efficacy Noted	Number of Patients
Pain	275
Symptoms	203
Sleep	120
Neuropathy	103
Anxiety	44
Headache/Migraine	35
Activity Level	31
Depression	17
QOL	16
Spasticity	16
Nausea/Vomiting	12
Mobility	8
Tremors	4
PTSD	3
Seizures	1

Results

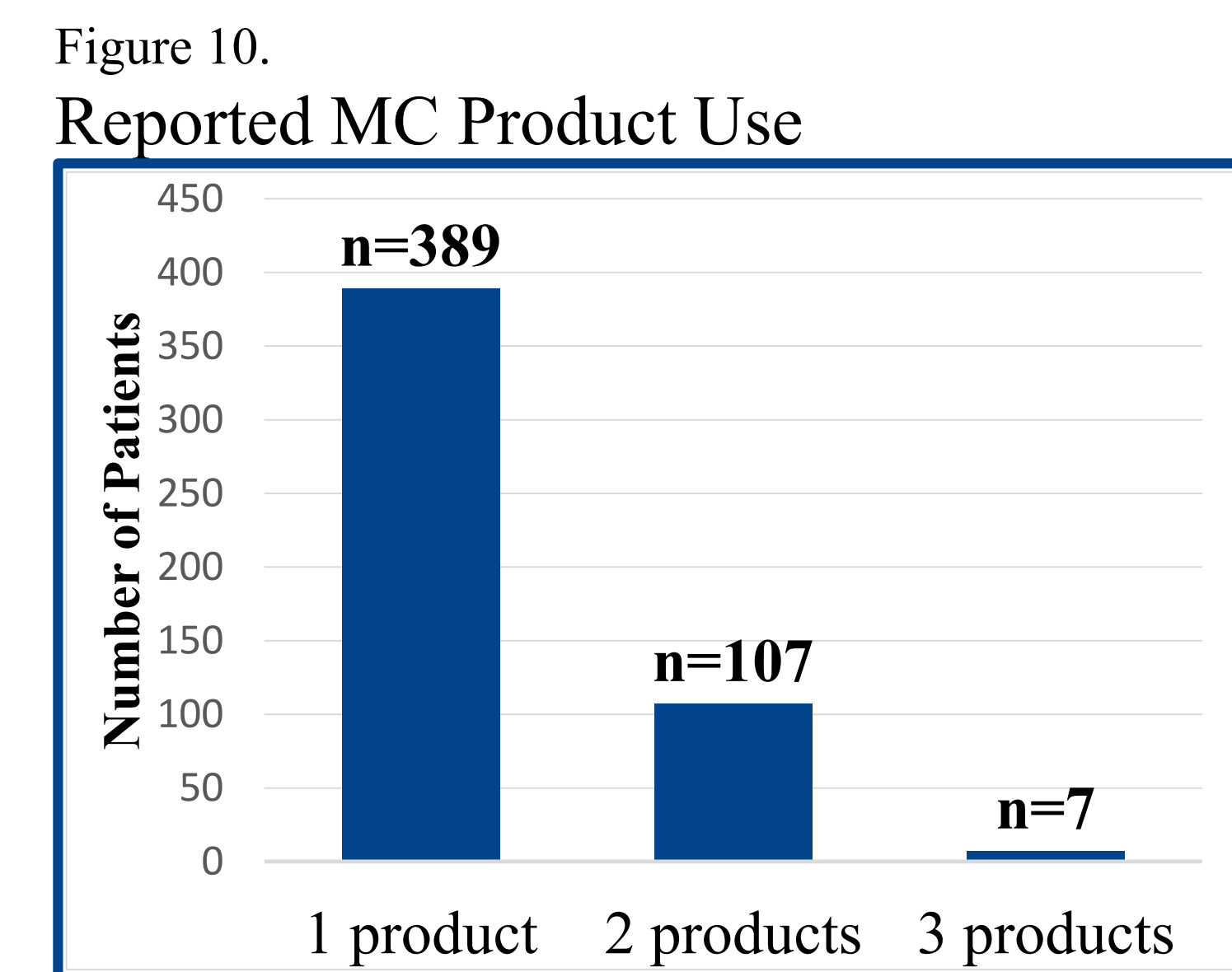
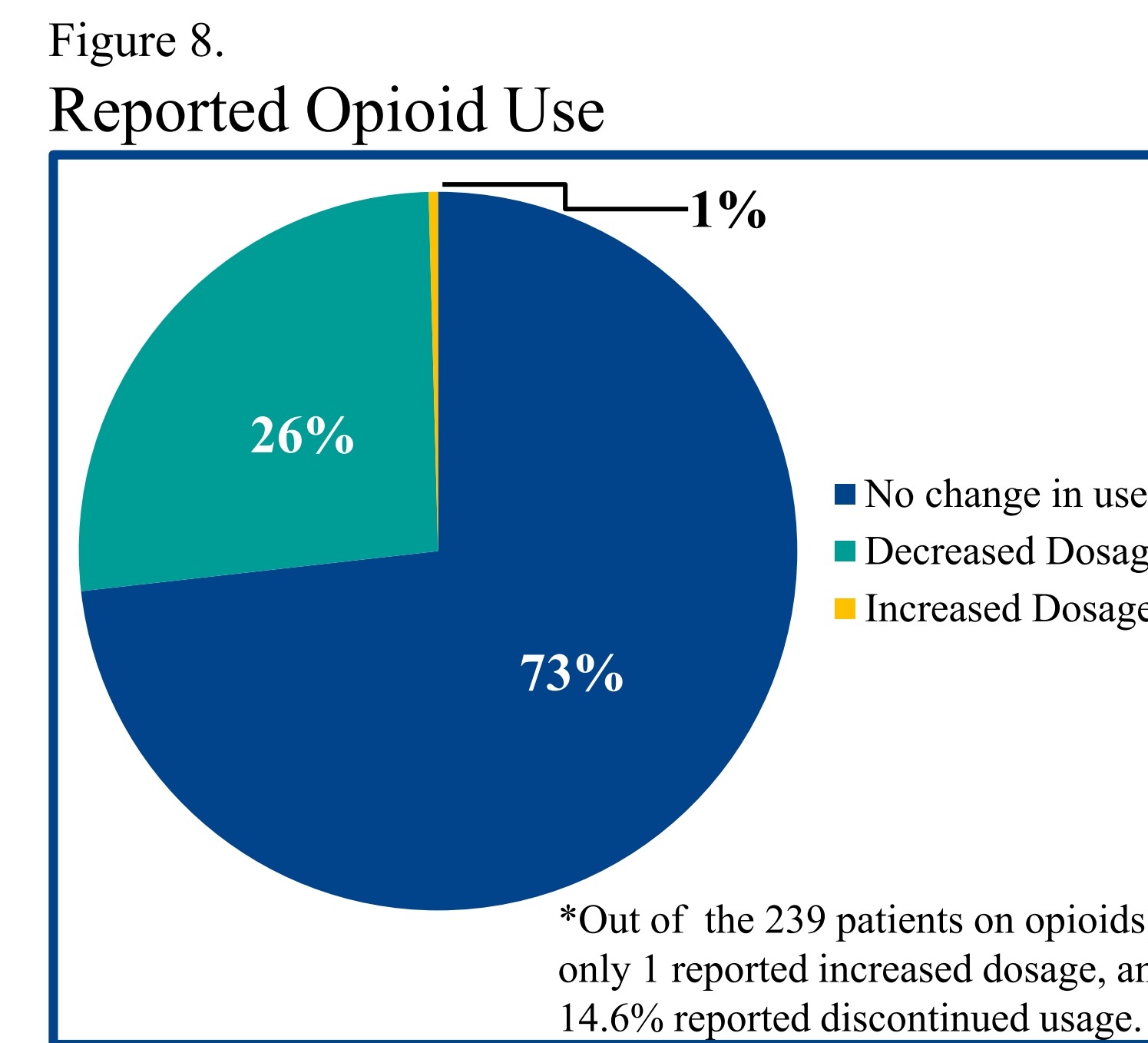
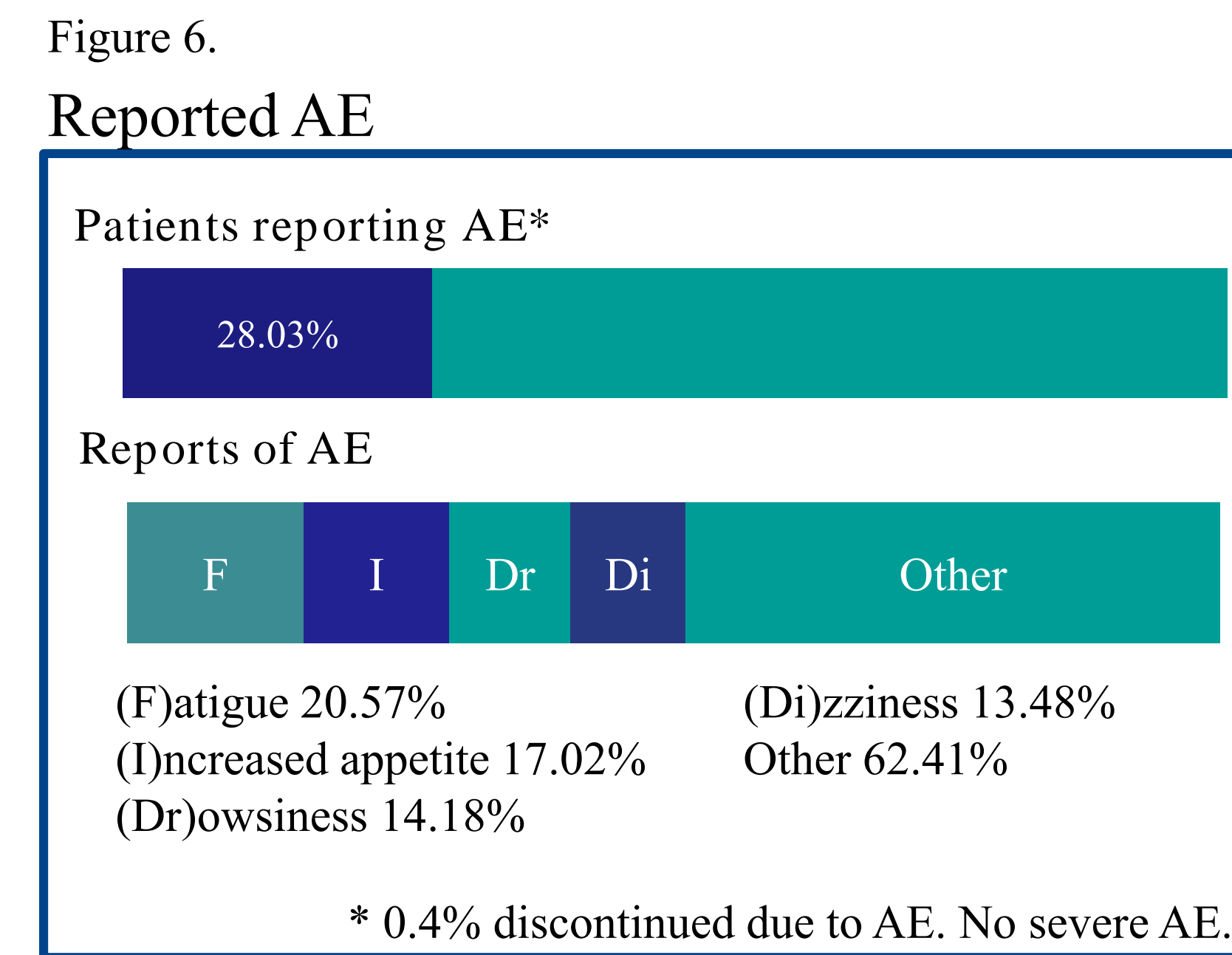
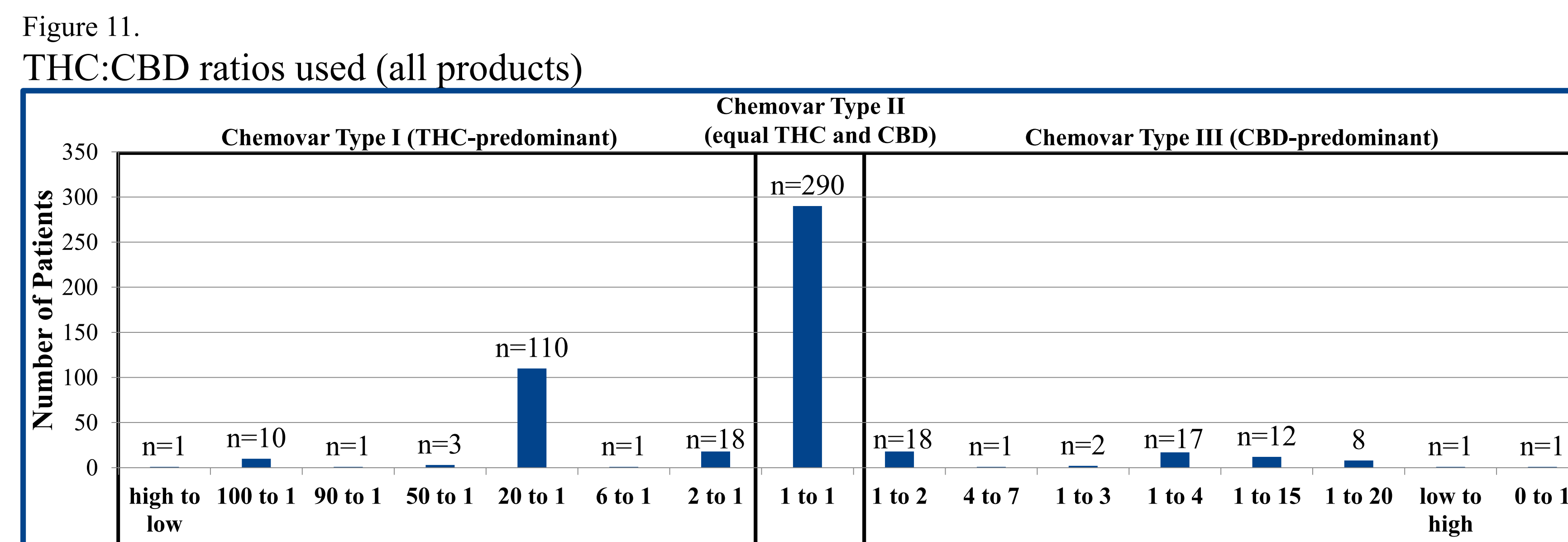
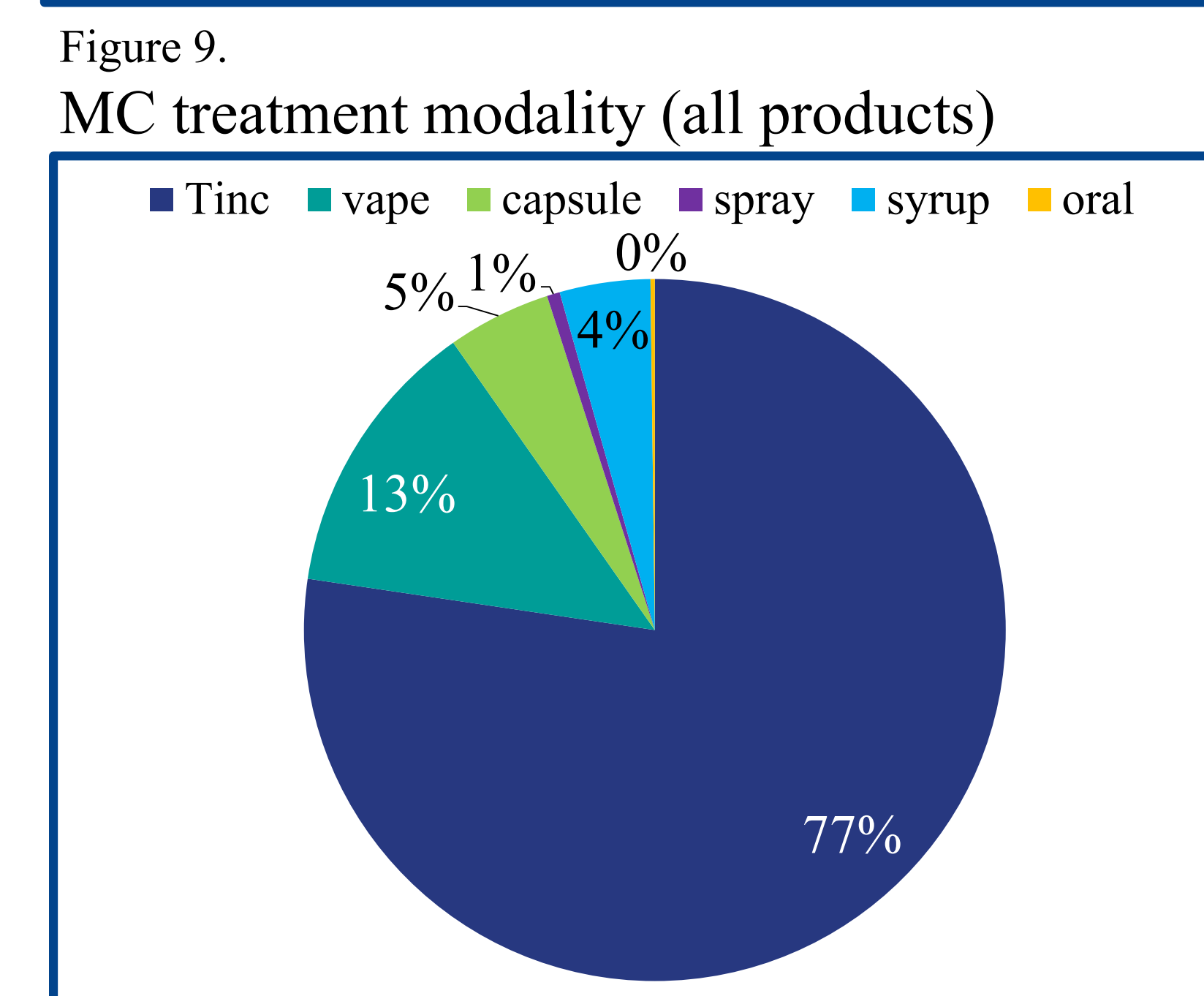
Figure 5. Neuropathy classifications

Types	Number of Patients	% Population
Neuropathy	213	42.35%
Polyneuropathy	118	23.46%
Peripheral Neuropathy	105	20.87%
Diabetic Polyneuropathy	56	11.13%
Small Fiber Neuropathy	43	8.55%
Peripheral Neuropathy	40	7.95%
Ulnar Neuropathy	37	7.36%
Others (n<30)	98	19.48%

Figure 7. Reported Neuropathic Pain Medication Use

Neuropathic Medications	Number of Patients in Use	Decreased Dosage	Discontinued Usage
Pregabalin	79	13*	11*
Gabapentin	176	15*	9*
Amitriptyline	27	5*	4*
Duloxetine	64	5*	5*

*Indicates statistical significance compare to baseline. (p<0.05)



Discussion

The results of this study suggest physicians should consider incorporating MC into a comprehensive treatment plan of those patients with underlying neuropathies. An overwhelming majority (85.09%) of the patients included reported subjective improvement in neuropathic symptoms, with 77.34% of patients reporting these results while utilizing only one MC product over the course of treatment. The most common product reported was a 1:1 ratio oral tincture. Average total daily mg exposures of THC and CBD were 24.33mg and 16.71mg respectively. There was no significant difference in treatment outcomes when comparing use of one product to use of multiple products, and no significant difference was found when comparing the three available treatment administration routes: tincture, vaporized inhalation, or capsule. All MC products are obtained by patients through licensed NYS dispensaries and are paid for out of pocket in full by patients, with an average monthly out of pocket cost of \$158.61 and over 22% of patients reporting difficulty affording treatment.

MC has several known mechanism of actions including; inhibition of cyclooxygenase-2 enzyme, increase in serotonin, inhibition of L-type calcium voltage-gated channel, supplementation for AEA, increase in GABA, and increase in prevalence of CB1R within the nervous system. The absence of current guidelines for MC use forces physicians to practice within a large clinical evidence gap to avoid risks associated with MC treatment.

Of patients examined for this study 28.03% reported side effects with the most commonly reported being fatigue, increased appetite, drowsiness, and dizziness. Only two subjects elected to discontinue MC treatment as a result of an AE, and no serious AE were reported, indicating MC is largely well tolerated by patients.

Conclusion

This study suggests that MC is generally well-tolerated in the treatment of neuropathies, with 85.09% of patients reporting improvement(s) in symptomology. This study found that the most common efficacious ratio for these patients is a 1:1 ratio of THC to CBD taken via oral tincture. While these results are promising, future randomized placebo-controlled trials are needed to determine MC's place the comprehensive treatment plans of those with neuropathies.

Acknowledgements & References

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All other authors report no disclosures.