

# The Use of Medical Cannabis in African American and Caucasian Populations

## A Comparative Study

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### Objective & Study Design

**Objective**  
To identify medical cannabis (MC) treatment differences between African American and Caucasian populations.

**Study Design**  
A retrospective chart review analysis was conducted on 1,558 randomly selected African American and Caucasian patients, of which 693 met our inclusion/exclusion criteria. These subjects were currently being treated with MC through New York State's Medical Marijuana program. Patients who 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: average median incomes, reasons for exclusions, patient-reported efficacy, MC dosing, opioid pain medications, and Adverse events (AE's) which were then analyzed for this study.

#### Inclusion/ Exclusion

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

#### Subjects

- 693 patients who were certified for MC were included
- 179 were African American, of which 68.2% were female and 31.8 % were male
- 514 were Caucasian, of which 57.8% were female and 42.2% were male
- Patients were excluded due to lack of follow-up, inability to initiate MC treatment, or insufficient clinical documentation.

#### Study Population

- 693 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 5.

#### Reported Opioid Use

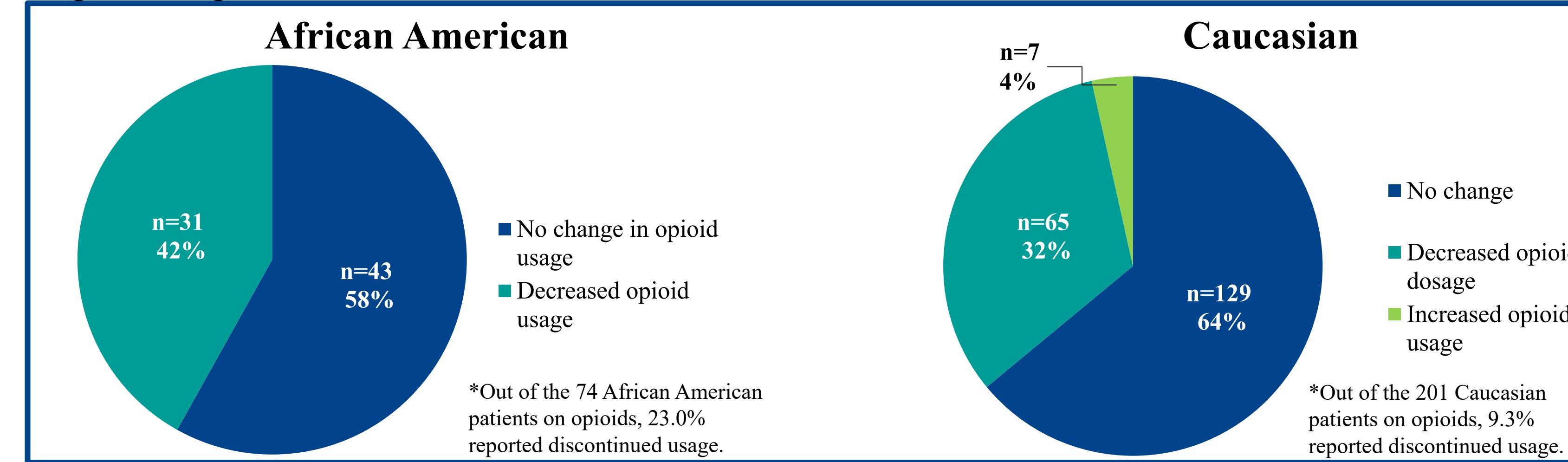


Figure 6.

#### Self-reported Improvement

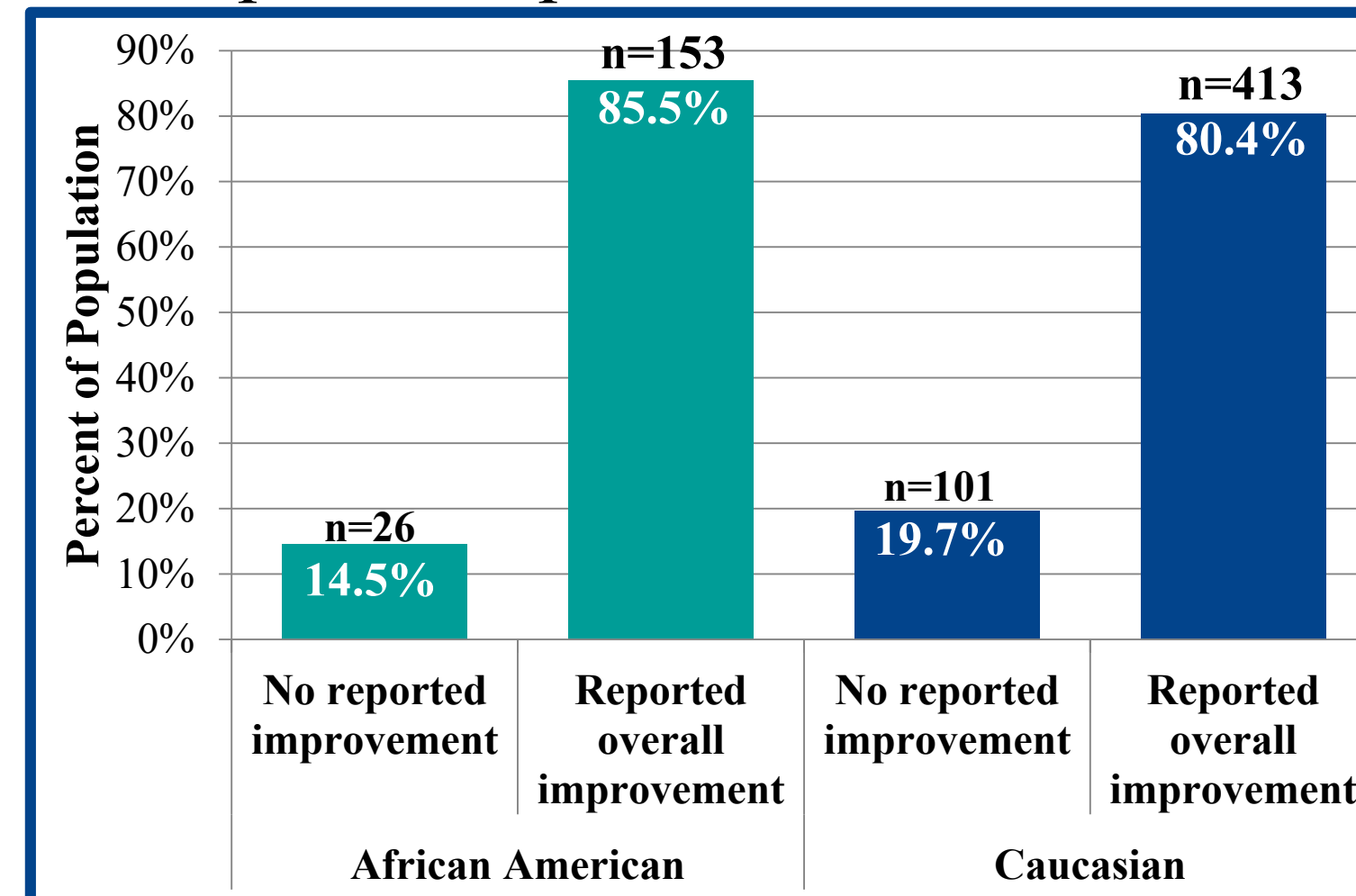


Figure 7.

#### Self-reported Improvement Profile

Efficacy Noted	% African American Population	% Caucasian Population	p-values
Pain	64.25%	50.78%	p=0.0013
Sleep	30.73%	23.15%	p=0.055
Symptoms Control	27.37%	11.87%	p=0.000028
Neuropathy	5.03%	13.04%	p=0.00033
Mood	5.03%	3.50%	p=0.40
Nausea/Vomiting	4.47%	3.11%	p=0.58
Others	31.28%	25.88%	p=0.17

Figure 8.

#### Patient-reported AE Profile

Reported Side Effects	% Population
Fatigue	2.23%
Somnolence	1.12%
Increased Appetite	3.91%
Dry mouth	2.23%
Anxiety	1.12%
Others	18.44%

\* 1.12% discontinued due to AE. No severe AE.

Reported Side Effects	% Population
Fatigue	4.67%
Somnolence	4.67%
Increased Appetite	2.72%
Dry mouth	1.75%
Anxiety	1.56%
Others	12.26%

\* 2.92% discontinued due to AE. No severe AE.

Figure 9.

#### THC:CBD Ratios Product (all products)

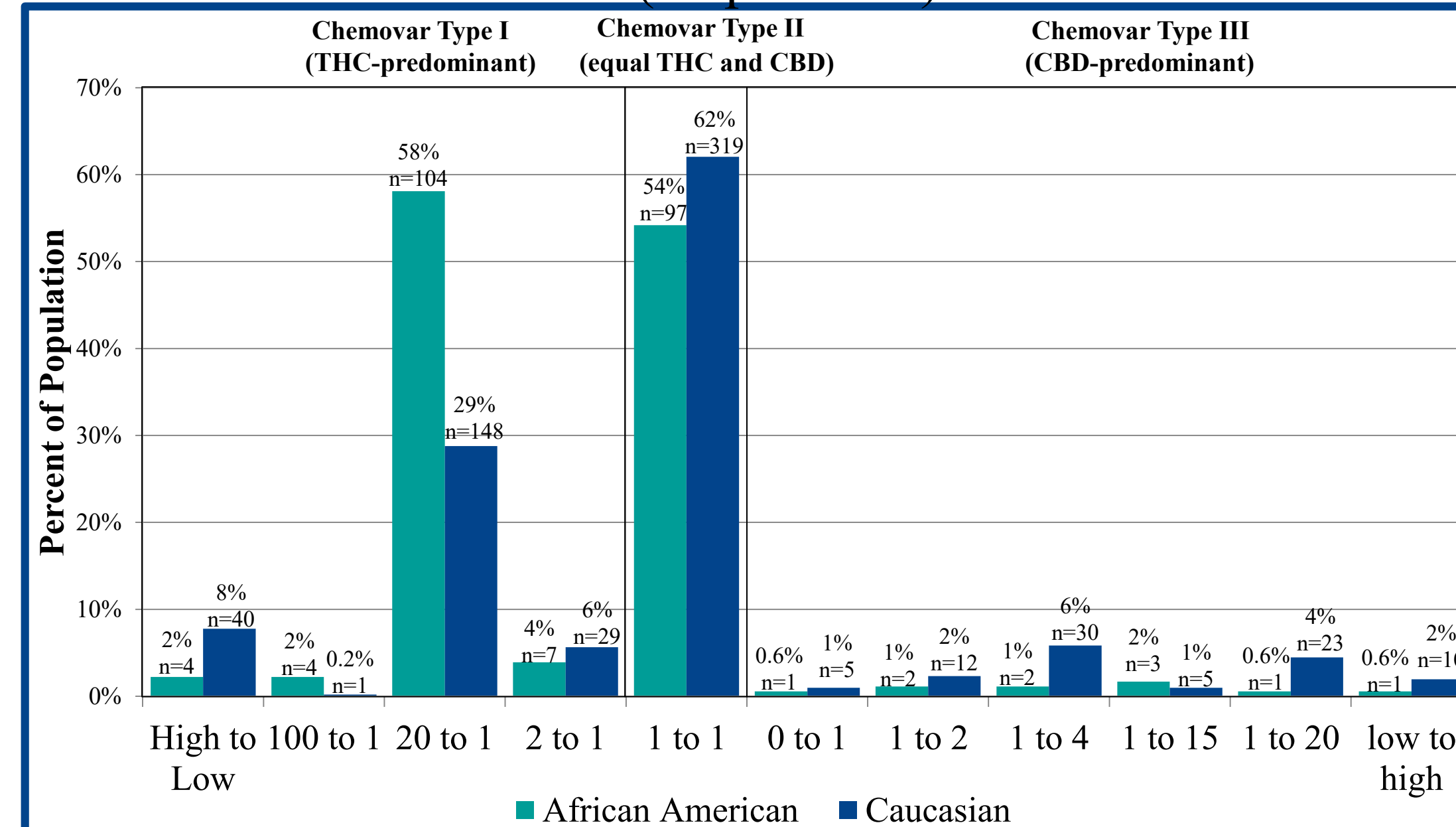
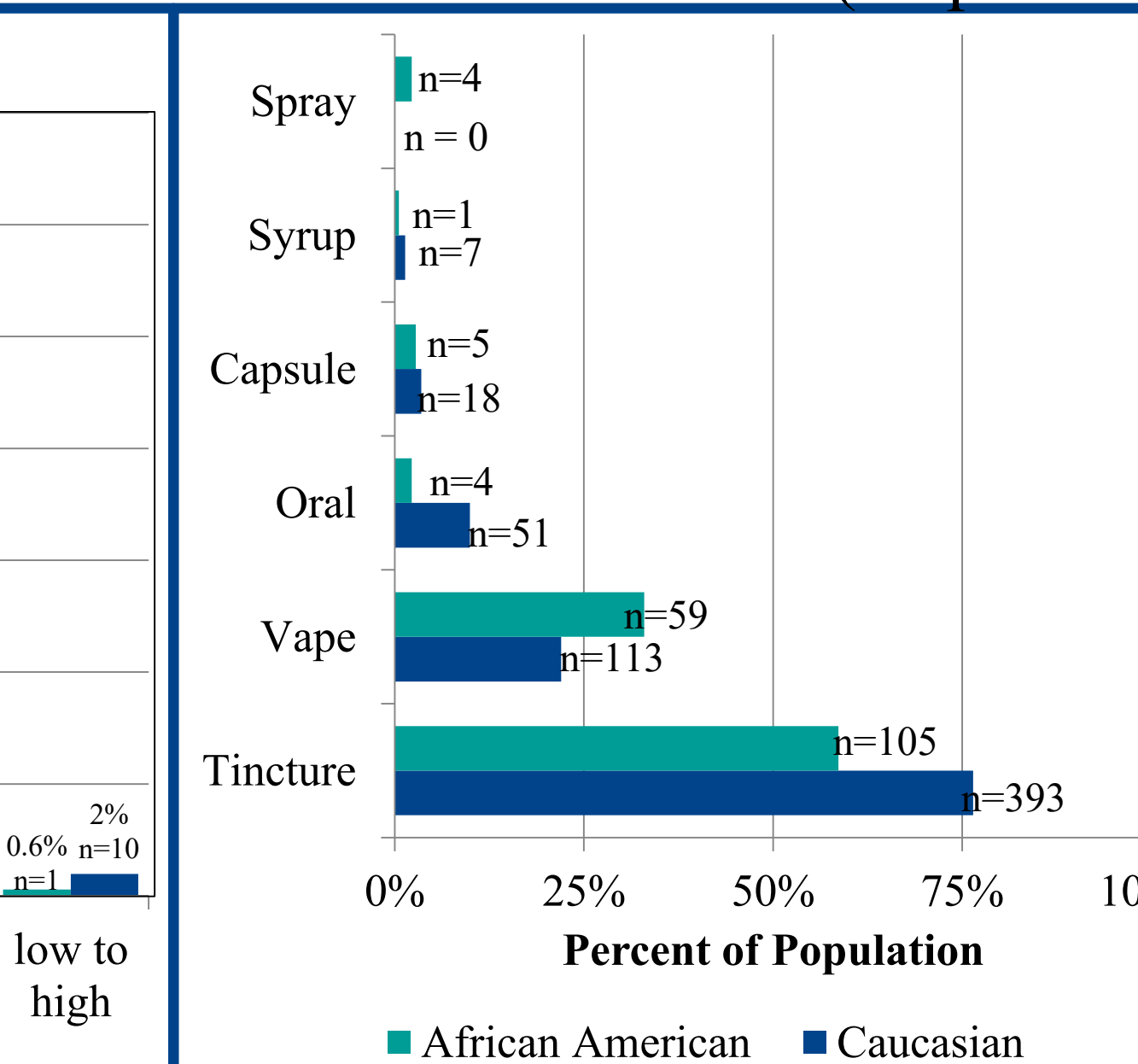


Figure 10.

#### MC Treatment Modalities (all products)



### Results

Figure 1.

#### Study participants by sex

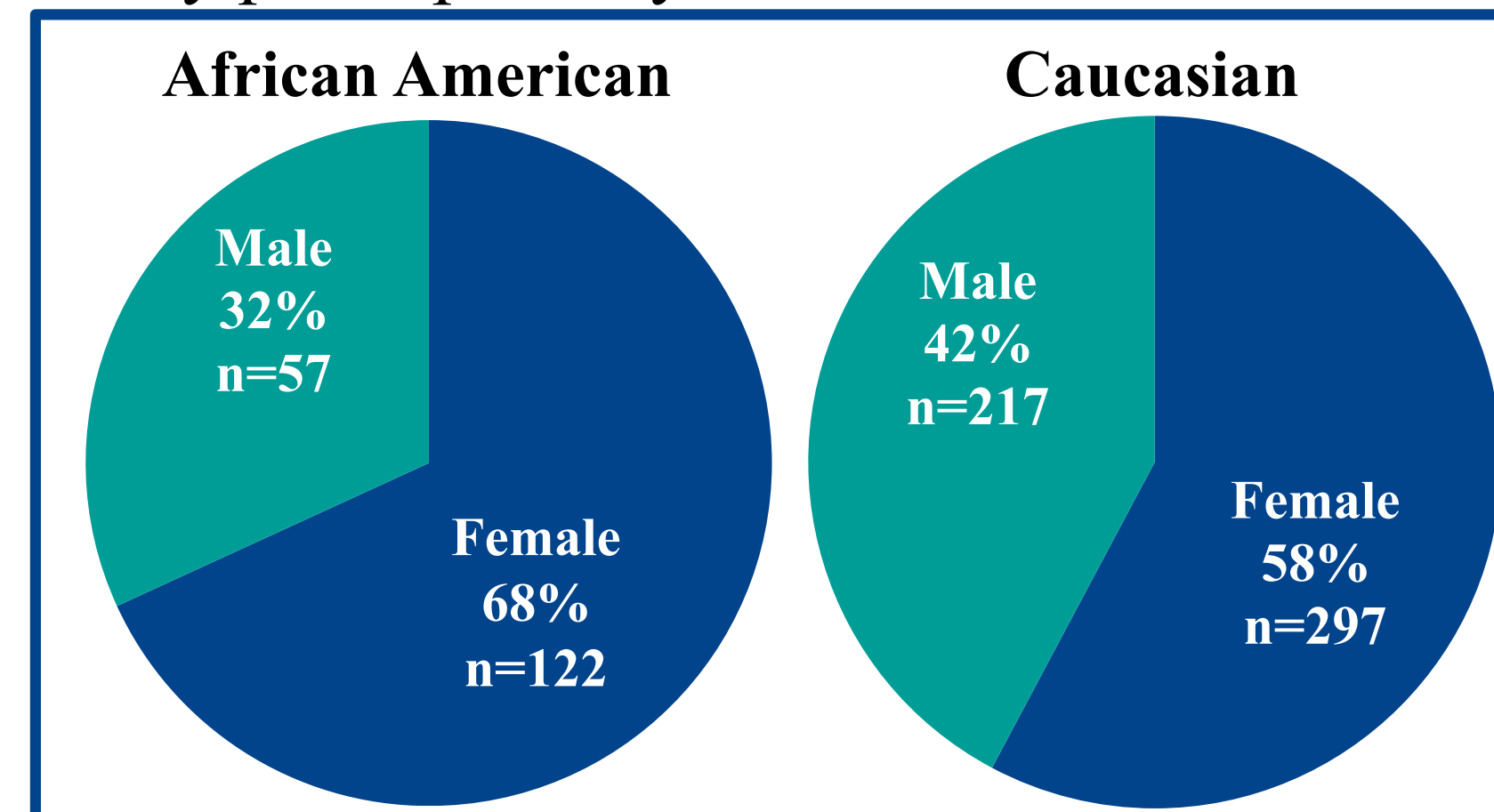


Figure 2.

#### Average Median Incomes of the Included Subjects

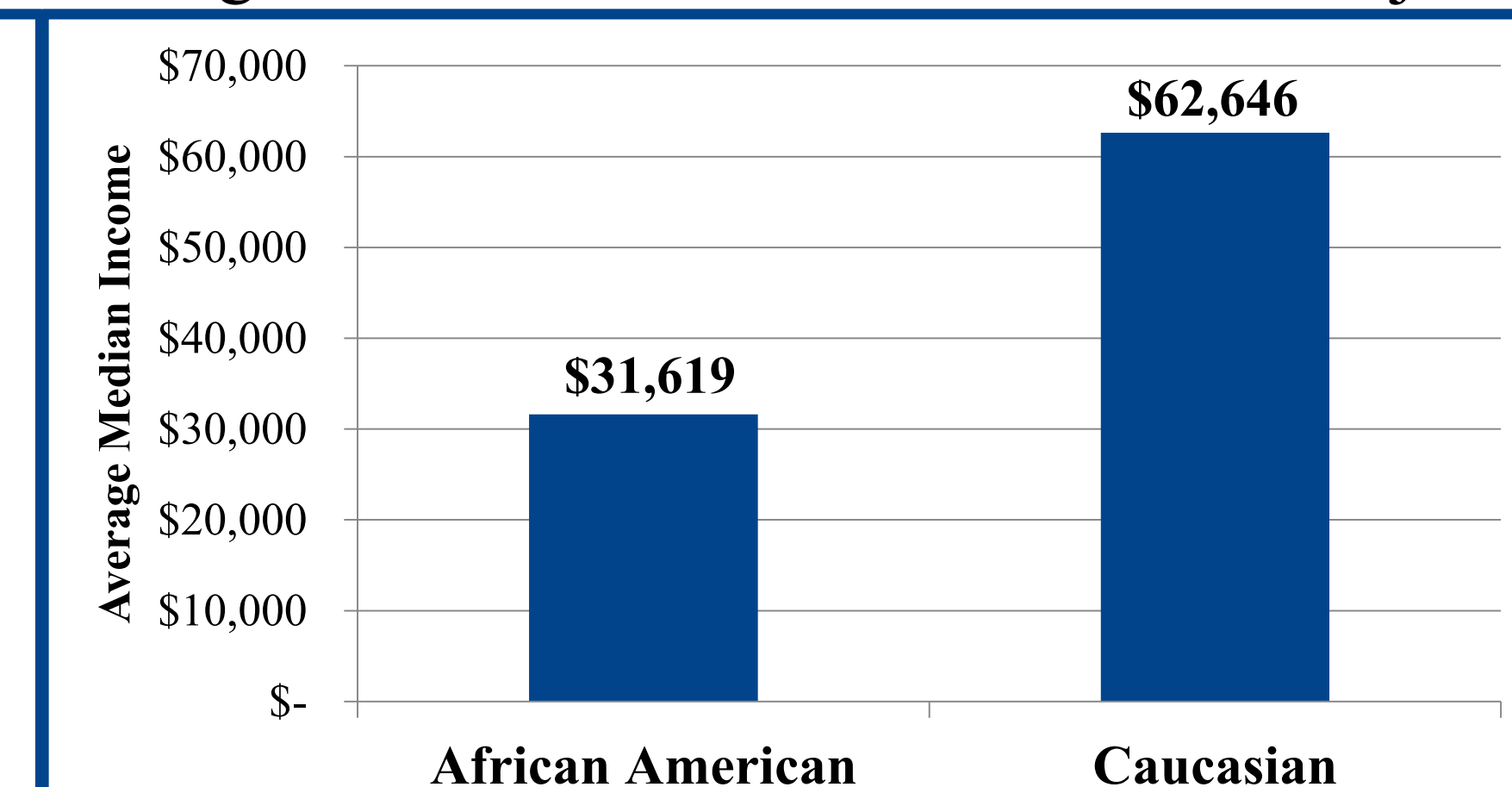


Figure 3.

#### Discontinuation Rate

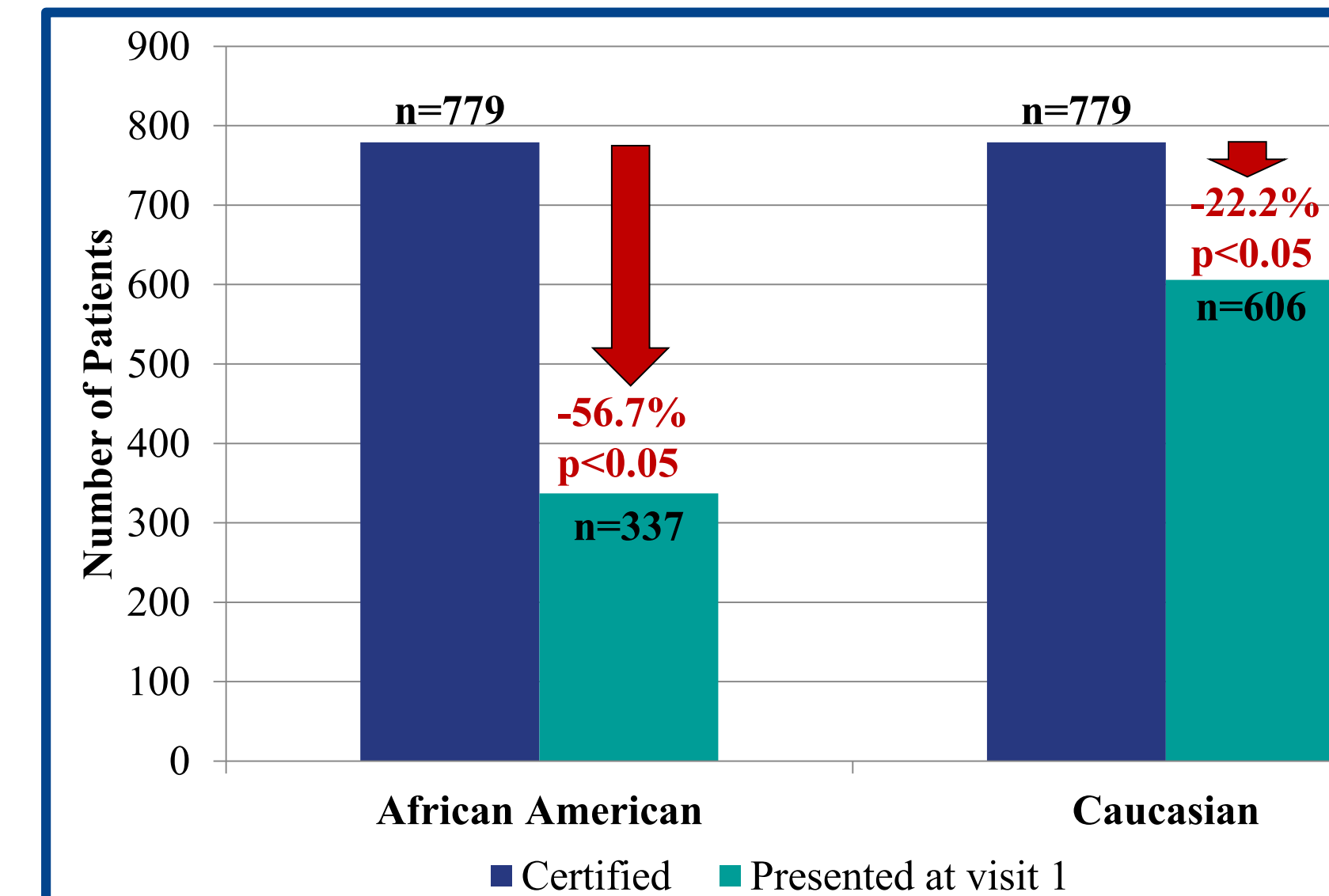


Figure 4.

#### Patient Cost as a Barrier to Cannabis Care

Race	Reason	% of Population
African American	Cost Prohibitive	47.14%
Caucasian	Cost Prohibitive	24.29%

**African American**: \$29,993  
**Caucasian**: \$58,238

### Discussion

Our data shows similarities in self reported improvement, opioid use, and reported side effects between self-identified Caucasians and African Americans, but also highlights important differences in retention rates between the two groups, with 43.3% of African American and 77.8% of Caucasians (p<0.05) reporting for the first re-evaluation. Of those excluded from the analysis due to lack of follow-up, it was found that those of African American descent were nearly two times more likely to cite cost as a determining factor as compare to their Caucasian counterpart. According to the 2020 HHS Poverty Guidelines, the annual income that defines poverty for a household of four is \$26,200; within our population, the average median incomes of African American and Caucasian patients were \$31,619 and \$62,646 respectively. The overall rate of improvement was remarkable for both cohorts but without significant difference between African American and Caucasian populations. Despite the lower retention rate, the African-American cohort noted a higher efficacy of pain control than Caucasians when adjusted for the cohort's small sample size, which is further supported by a greater reduction in opioid consumption amongst the African American cohort compared to the Caucasian cohort (p<0.05).

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, anxiolytic action in limbic and paralimbic brain areas. 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 20.6% of African Americans reported side effects with increased appetite being the most common, and 24.5% of Caucasians (p=0.18) reported side effects with fatigue and somnolence being the most common. Only two subjects in African American and fifteen subjects in Caucasian elected to discontinue MC treatment as a result of an AE, and no serious AEs were reported, indicating that MC is generally tolerated by patients.

### Conclusion

The results of this study suggests that MC is well-tolerated among African American and Caucasian patients, with improvement in pain, sleep, and symptom control reported in both groups. Our findings reveal striking racial disparities that manifest in disproportionate access to MC treatment, just as they hinder access throughout the entire field of medicine. Despite similar reported improvements, side effects, and out of pocket costs, there was a disparity in follow up between African American and Caucasian patients, which shows that more must be done to close the gap in continued access between these groups. Furthermore, the portion of African-American cohort that was able to continue MC treatment reported improvements in pain and decreased opioid use at a higher rate compared to the Caucasian population, highlighting the benefits of a physician-guided comprehensive care plan that includes MC. Future medical cannabis program reform is desperately needed in addressing this disparity gap as well as additional studies to probe differences in present in this study.

### Acknowledgements & References

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 All other authors report no disclosures.

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