

BACKGROUND

- Medications used for substance use disorder can complicate how well a patient's acute pain is controlled. Buprenorphine is a partial agonist that can inhibit the effects of other opioids used for pain control. Methadone is a full agonist that can be used for opioid use disorder or pain control at different dosages.

OBJECTIVE

- This study will evaluate pain control in patients being treated for substance use disorder and compare that to pain management after orthopedic surgery in patients without substance use disorder.

METHODS

Study Design

- Single center retrospective chart review of 60 patients

Inclusion Criteria

- Adults age from 18 to 89 years old
- Not on hospice
- Admitted for at least 48 hours
- Received one dose opioids for pain control
- Admitted to Memorial Medical Center between March 31, 2015 and March 31, 2018

Study Measures

Primary Endpoints

- Average total morphine milligram equivalents
- Average pain score

Secondary Endpoints

- Names of which pain medications were used
- Discharge morphine milligram equivalents
- Frequency of intravenous opioids

Data Analysis

- Normally distributed data was assessed using a student's t-test.
- Data that is not normally distributed was assessed using a Wilcoxon-Mann-Whitney test.
- Confidence interval was set to 95%.

RESULTS

Table 1: Demographics

	Experimental	Control
Age (Std. Deviation)	45.0 (+/-12.9)	62.4 (+/-13.4)
Male Gender	43 %	33.3%
Race	86% Caucasian	80% Caucasian
Antidepressant Use	40%	50%
Charlson Comorbidity Index Median	1 (0-2.25)	1 (0.25-2)
Anxiolytic Use	40%	3%
Home Opioid Medication Use	100%	33.3%
Post-op hip (%)	---	57%
Post-op knee (%)	---	40%

RESULTS

Table 2: Average Total MME over 48 Hours

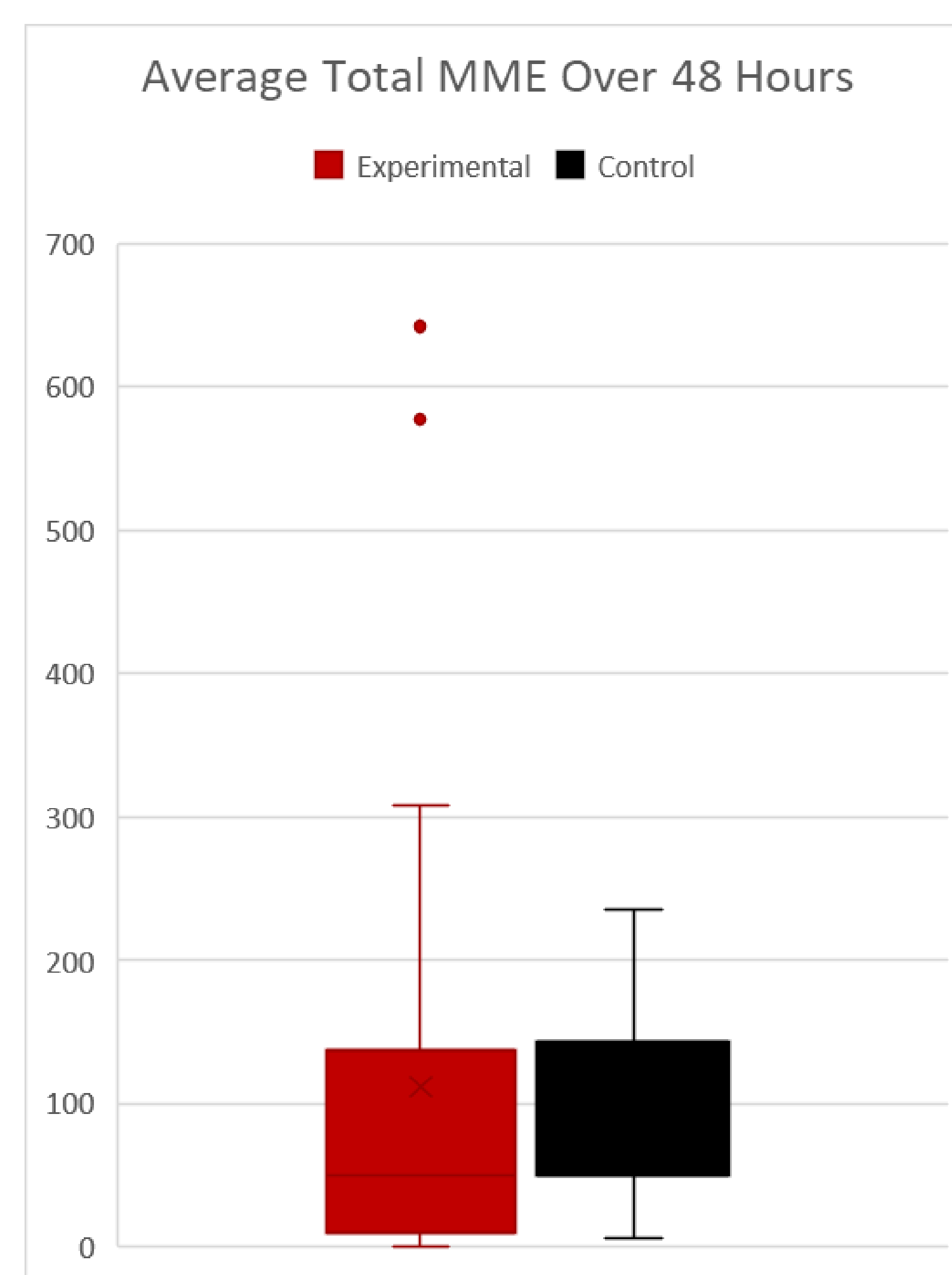


Table 3: Average Pain Score over 48 hours

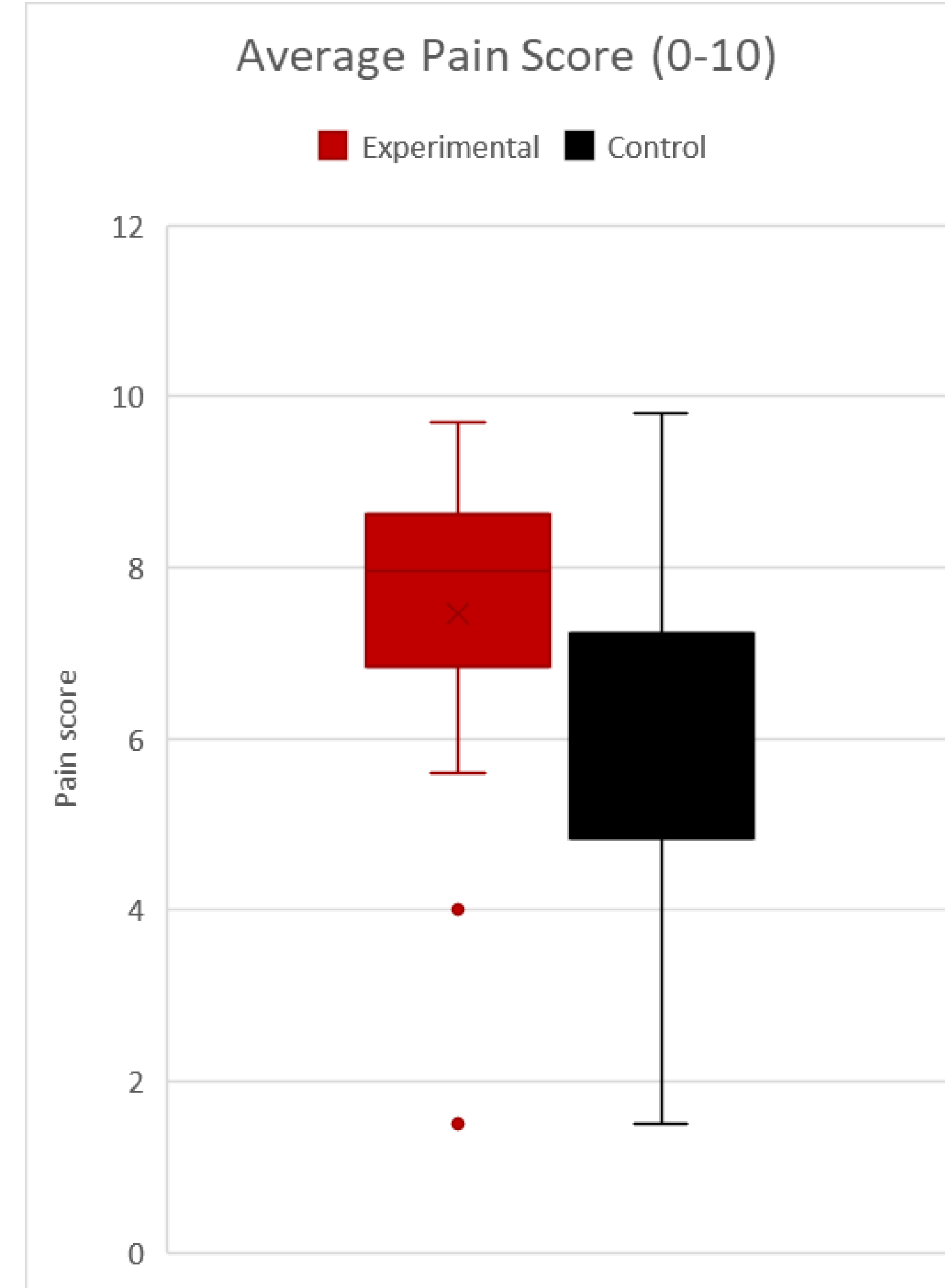
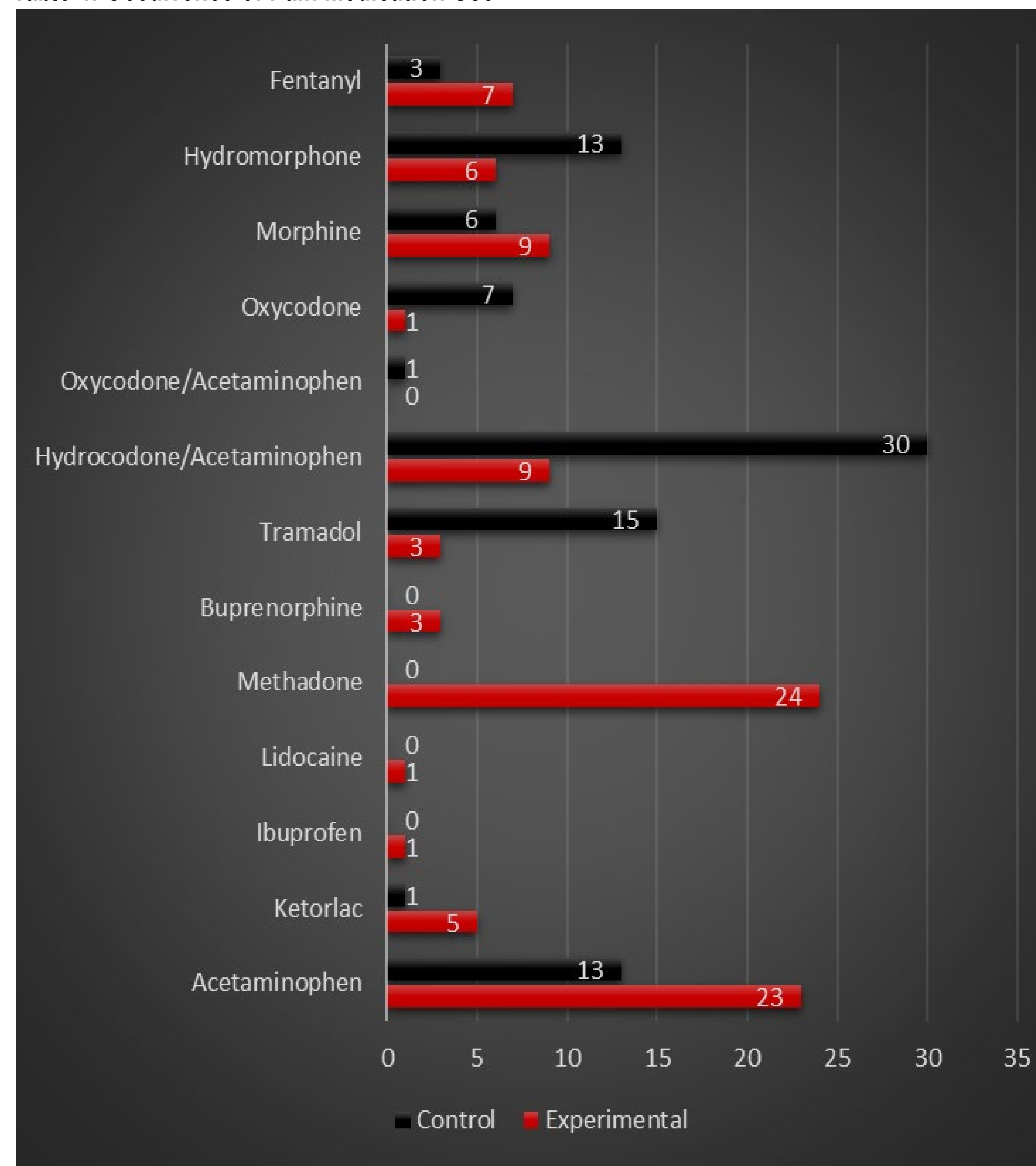


Table 4: Occurrence of Pain Medication Use



RESULTS

Table 5: Primary and Secondary Outcomes

Results	Experimental	Control	$p=0.05$
Average Total MME in 48 Hours	139.9 mg	96.6 mg	$p=0.889$
Average Pain Score	7.46	5.94	$p=0.002$
Adjunctive Therapy	80%	43%	
Discharge MME	26.8 +/- 33.1	60.8 +/- 38.1	
IV opioids within 48 hours (%)	16 (53%)	17 (57%)	
MAT restarted within 24 hours (%)	60%	---	
MAT restarted within 48 hours (%)	76%	---	

DISCUSSION

- The benefits this study were in the reporting of outcomes that had not been reported in prior studies.
- Pain Scores showed pain scores were higher aligning with prior studies reporting the greater behavioral disturbances in this group.
- Discharge MME was understandably greater in the control arm.
- Adjunctive therapy was more utilized in the experimental arm.
- A limitation of this study is that the comparator arm was not a matched control.
- A prior study compared morphine milligram equivalents between groups outcome was measured.¹
- Similar amount of opioids used over 7 days between groups with substance use disorder and case controlled patients that did not have that disorder (5.07 vs 6.67 mg/day).
- Greater behavioral disturbances with the patients that had substance use disorder. Non-opioid pain medications were used in a similar rate in both groups within this study (42% vs 40%).
- A study from the Journal of Clinical and Orthopedic Trauma evaluated average pain scores 24 and 48 hours after total knee arthroplasty (4.15, 3.85).²
- These pain scores are lower than the average for the control, which was 5.9. The control arm pain score could be above the normal range.

CONCLUSION

This study suggests the amount of opioids used in patients with a substance use disorder is not statistically different than the amount that would be used in patients without substance use disorder. Patients being treated for substance use disorder had statistically significant higher pain scores those patients without substance use disorder. Further larger studies comparing patients with substance use disorder to other groups are needed to confirm this result.

RESOURCES

- Hines S., Theodorou S., Williamson A.. Management of Acute Pain in Methadone Maintenance Therapy in Patients. Drug Alcohol Rev. 2008; 27:519-523.
- Paglia A., Goderecci R., Ciprietti N.. Pain Management after total knee arthroplasty. Journal of Clinical Orthopedic Trauma, 2020; 11: 113-117.