

## PURPOSE

Describe the percentage of patients prescribed a controlled and non-controlled medication in an United States Emergency Department for a diagnosed ankle fracture.

## INTRODUCTION

Ankle fractures are a common injury across all age groups with an overall incidence rate of 160 per 100,000 persons-years.<sup>1</sup>

Many patients present to the Emergency Department (ED) when they fracture their ankle to seek treatment and relief of their symptoms.

Opioid analgesics are effective at reducing acute musculoskeletal pain.

This has likely contributed to the 10% increase in opioid analgesics administered by ED providers from 2001 to 2010, while the rate of non-opioid analgesics remained unchanged.<sup>2</sup>

Moreover, ED providers indicate they are more likely to prescribe opioid analgesics for an ankle fracture than for an ankle sprain, despite patients having similar levels of acute pain (10/10).<sup>3</sup>

With a heightened awareness towards the potential harms related to the use of opioids combined with an increased likelihood of prescribing opioids for an ankle fracture by ED providers, it is critical to describe the in both opioid and non-opioid analgesic for this common injury.

By doing this, resources and future research can be directed towards specific populations to reduce the use of opioid analgesics.

## PARTICIPANTS

This was a secondary analysis of the publicly available data collected through the National Hospital Ambulatory Medical Care Survey from 2006-2015. Data analyzed using the sampled visit weight, yielding an unbiased national estimate of ED percentages. Due to the complex sample design, sampling errors were determined using SAS software.

## DATA ANALYSIS

The frequency of patients that did or did not receive a scheduled medication, the schedule of medication, and patient demographic information (age, sex, and region) for all ankle fracture cases.

## RESULTS

Approximately, 2,983,000 ankle fractures were diagnosed in EDs across the United States between 2006-2015.

Among patients diagnosed with an ankle fracture in the ED, 86.86% of patients were given some form of a medication (Fig. 1).

Of those medication prescribed, 31% were Schedule II, 32% were Schedule III and 34% were non-controlled medications (Fig. 2).

Patients <15 years of age were likely to receive a non-controlled substance (Fig. 3).

## RESULTS Cont.

Between 15 and 24 years of age, Schedule III medications had a higher prevalence of being prescribed. However, between 25 and 44 years of age, Schedule II medications were predominantly prescribed. This trend continues as age increases (Fig. 3).

There is no apparent trend between male and females for the prescribing of scheduled and non-controlled medications (Fig. 4).

Within the Northeast non-controlled medications were among the highest prescribed, however, they prescribed 21% more Schedule II medications than Schedule III. In contrast, the West prescribed more Schedule III medications than Schedule II by 11% (Fig. 5).

Figure 1. Prevalence Rate of an Opioid Being Prescribed in the Emergency Department for an Ankle Fracture

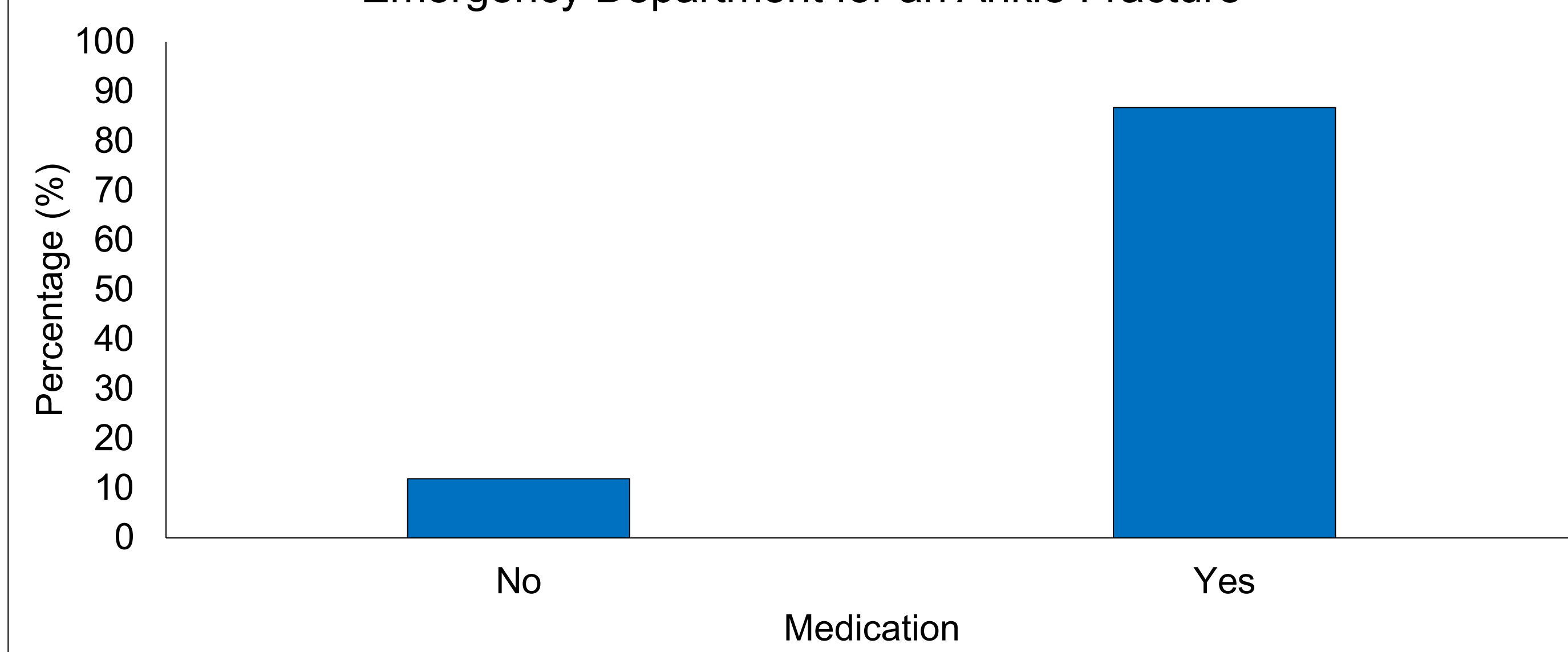


Figure 2. Distribution of Scheduled and Non-Scheduled Medications

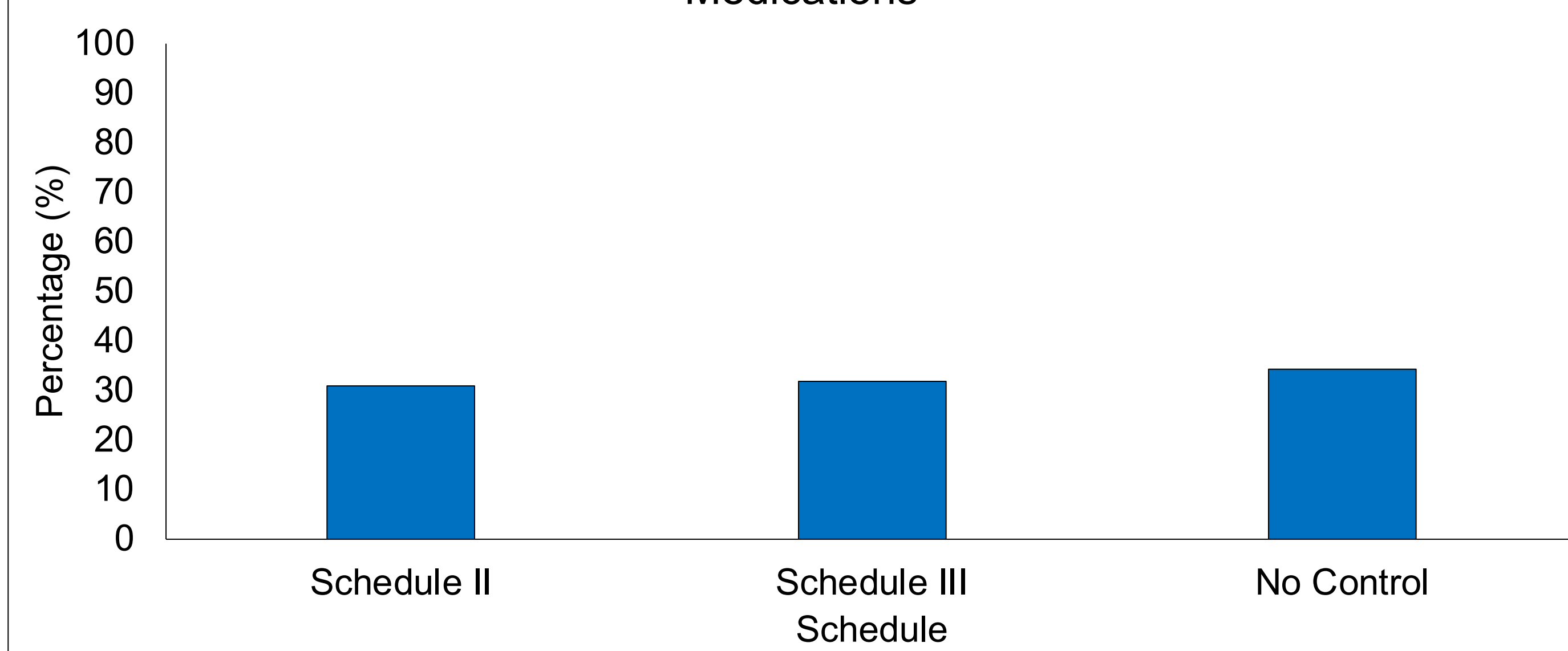


Figure 3. Scheduled Medications Prescribed Based Upon Age

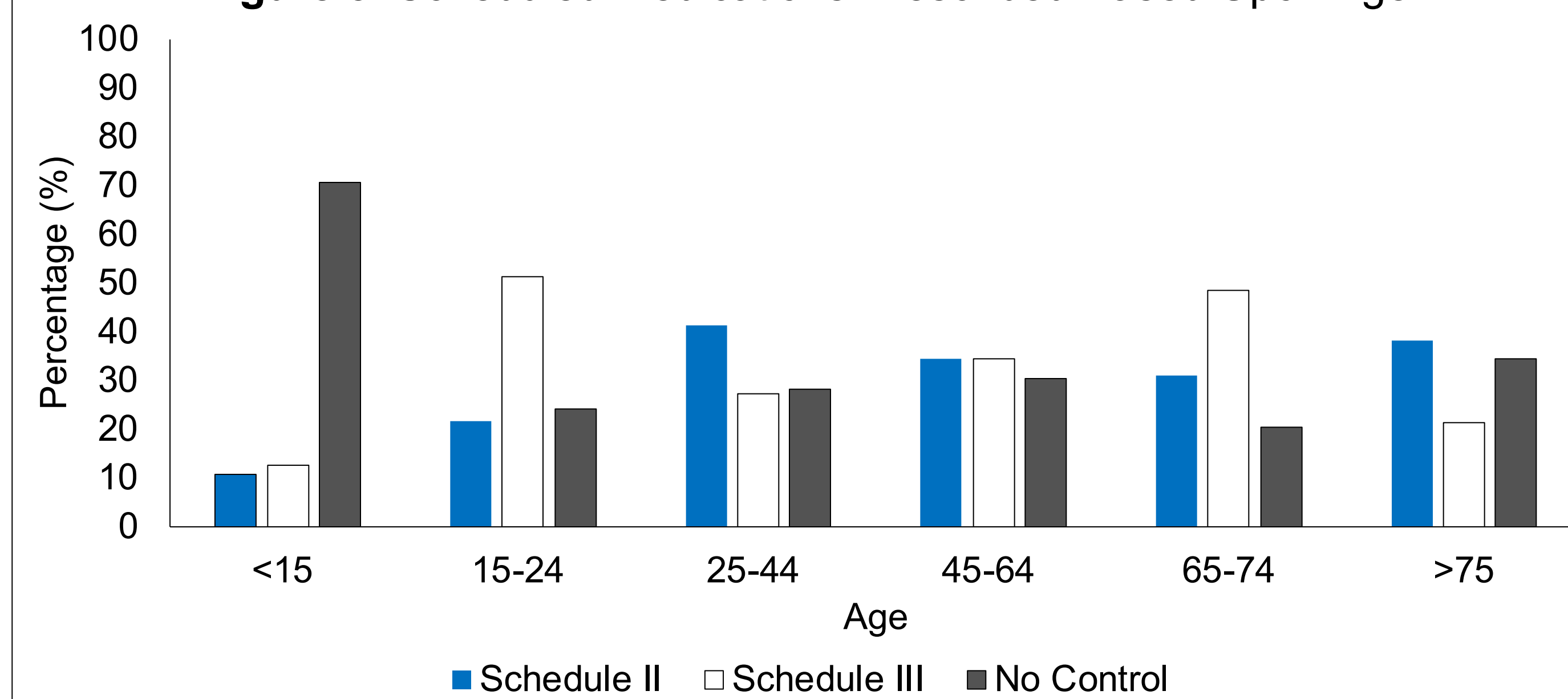


Figure 4. Scheduled Medications Prescribed Based Upon Sex

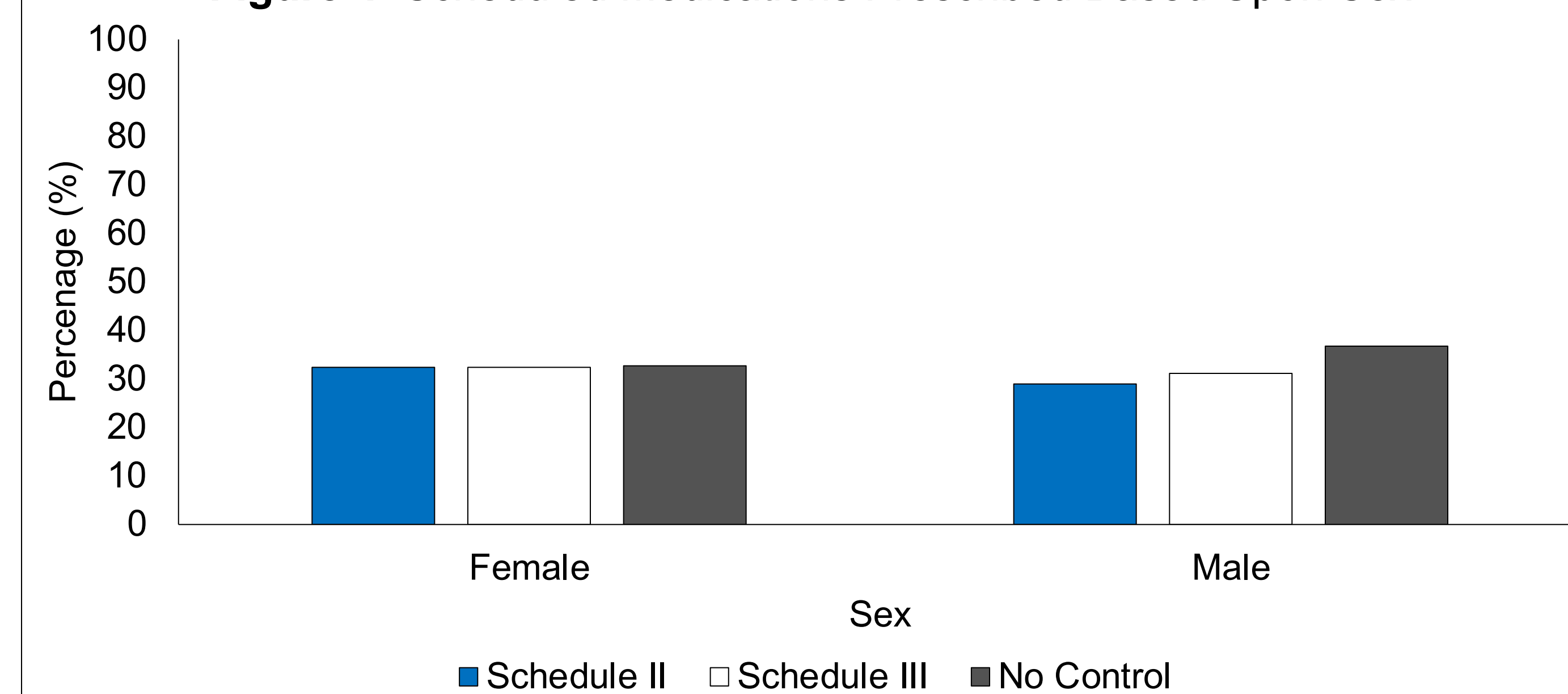
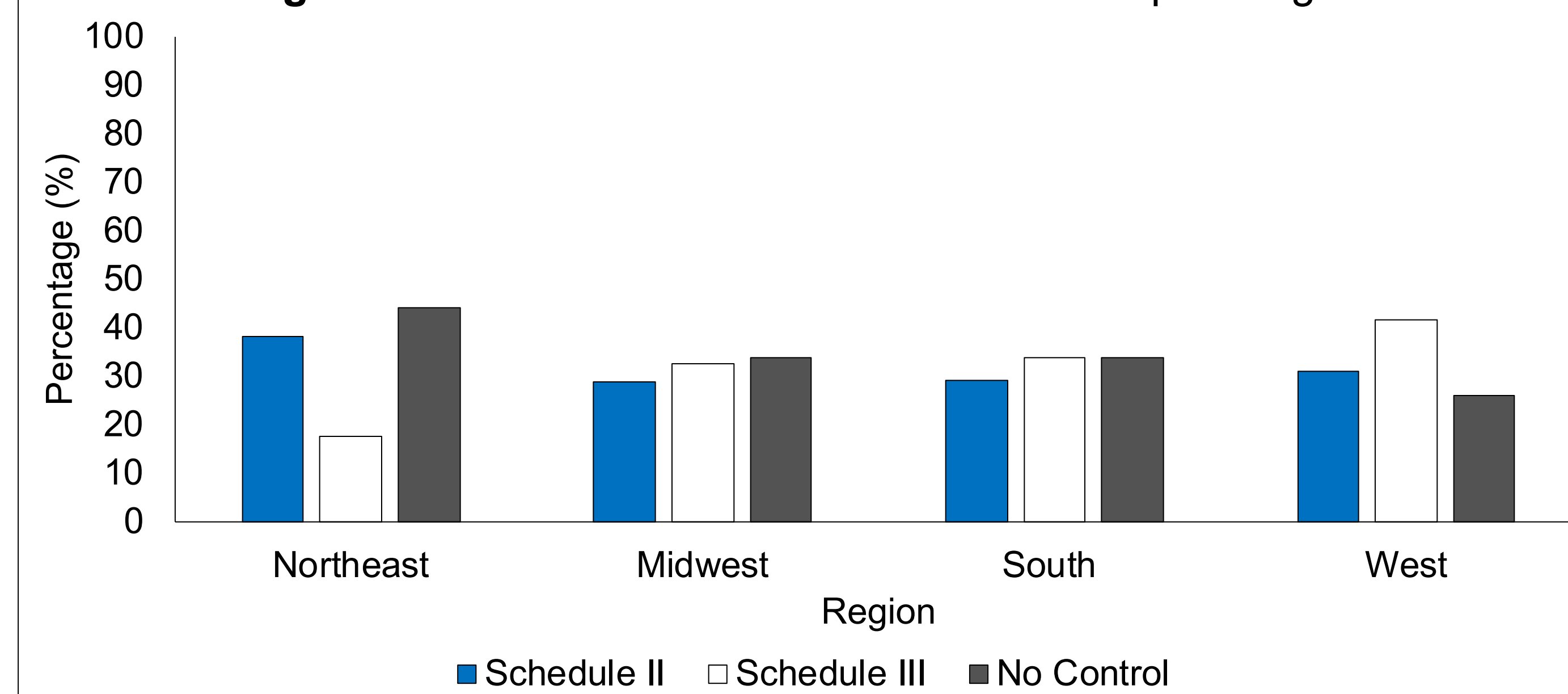


Figure 5. Scheduled Medications Prescribed Upon Region



## CONCLUSION

Approximately, 60% of ED patients diagnosed with an ankle fracture were given a scheduled medication.

This high use of scheduled medication reflects previous reports indicating ED prescribers are more likely to prescribe opiates for an ankle fracture than other ankle injuries, despite having similar pain levels.<sup>3</sup>

Earlier reports have found that the use of scheduled medications in the ED increases as age increases.<sup>4</sup> This is consistent with our findings for scheduled medications being prescribed for ankle fractures increases as age increases.

There was a higher prominence of Schedule II medications being prescribed in the Northeast then Schedule III. In contrast, the West prescribed more Schedule III drugs then Schedule II.

Future research should look at prescribing non-controlled medications to those over the age of 15 and why the Northeast has a higher prescribing rate or Schedule II medications, a more addictive form of medication. In addition, non-pharmacological treatments should be considered for those with ankle fractures to help prevent the risks that are associated with opioid use.

## RESOURCES

1. Elsoe R, Ostgaard SE, Larsen P. Population-based epidemiology of 9767 ankle fractures. *Foot Ankle Surg.* 2018;24(1):34-39.
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3. Pomerleau AC, Perrone J, Hoppe JA, Salzman M, Weiss PS, Nelson LS. Impact of Prior Therapeutic Opioid Use by Emergency Department Providers on Opioid Prescribing Decisions. *West J Emerg Med.* 2016;17(6):791-797.
4. Van Winkle PJ, Ghobadi A, Chen Q, Menchine M, Sharp AL. Association of age and opioid use for adolescents and young adults in community emergency departments. *Am J Emerg Med.* 2018.