

Background

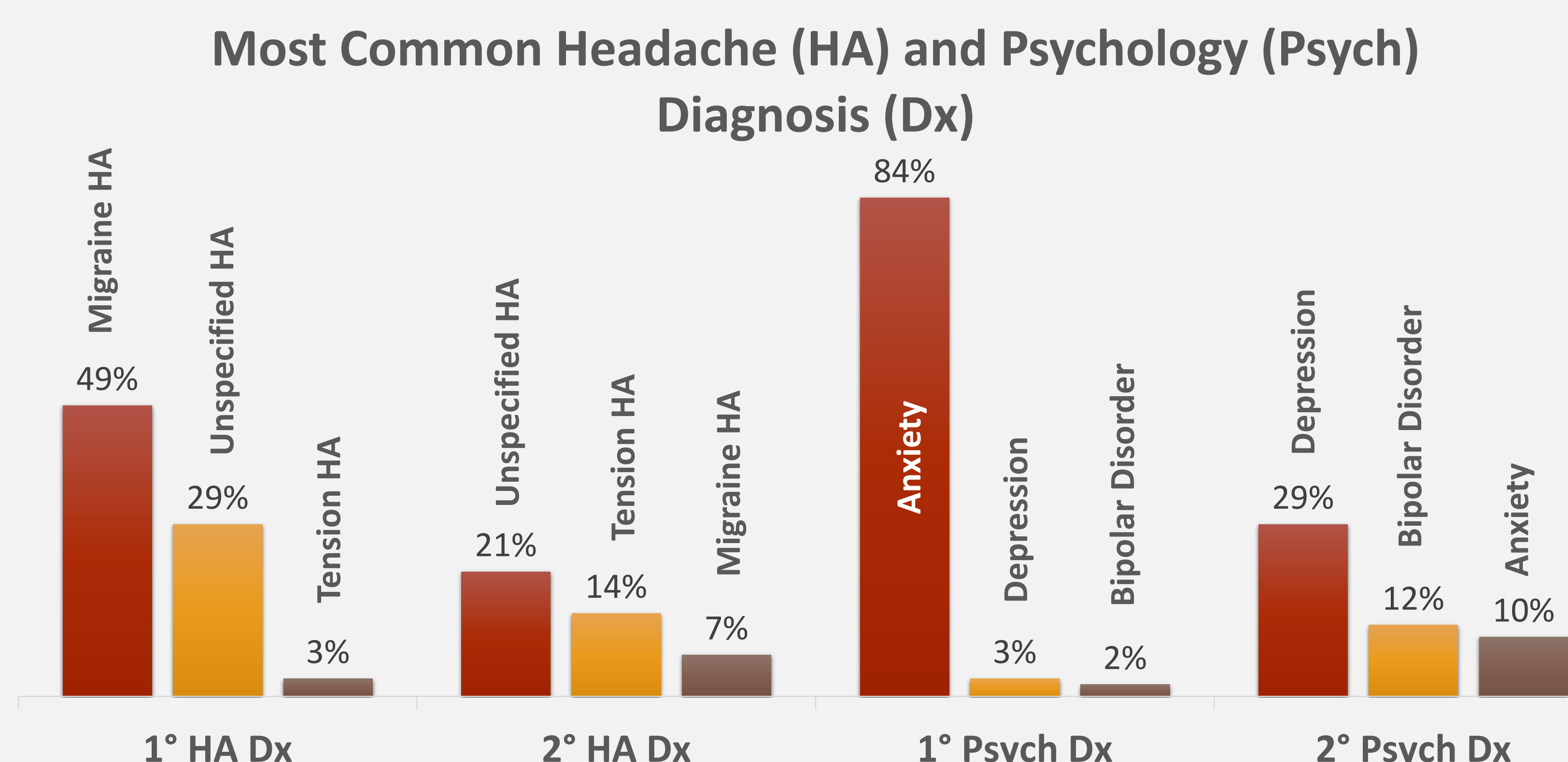
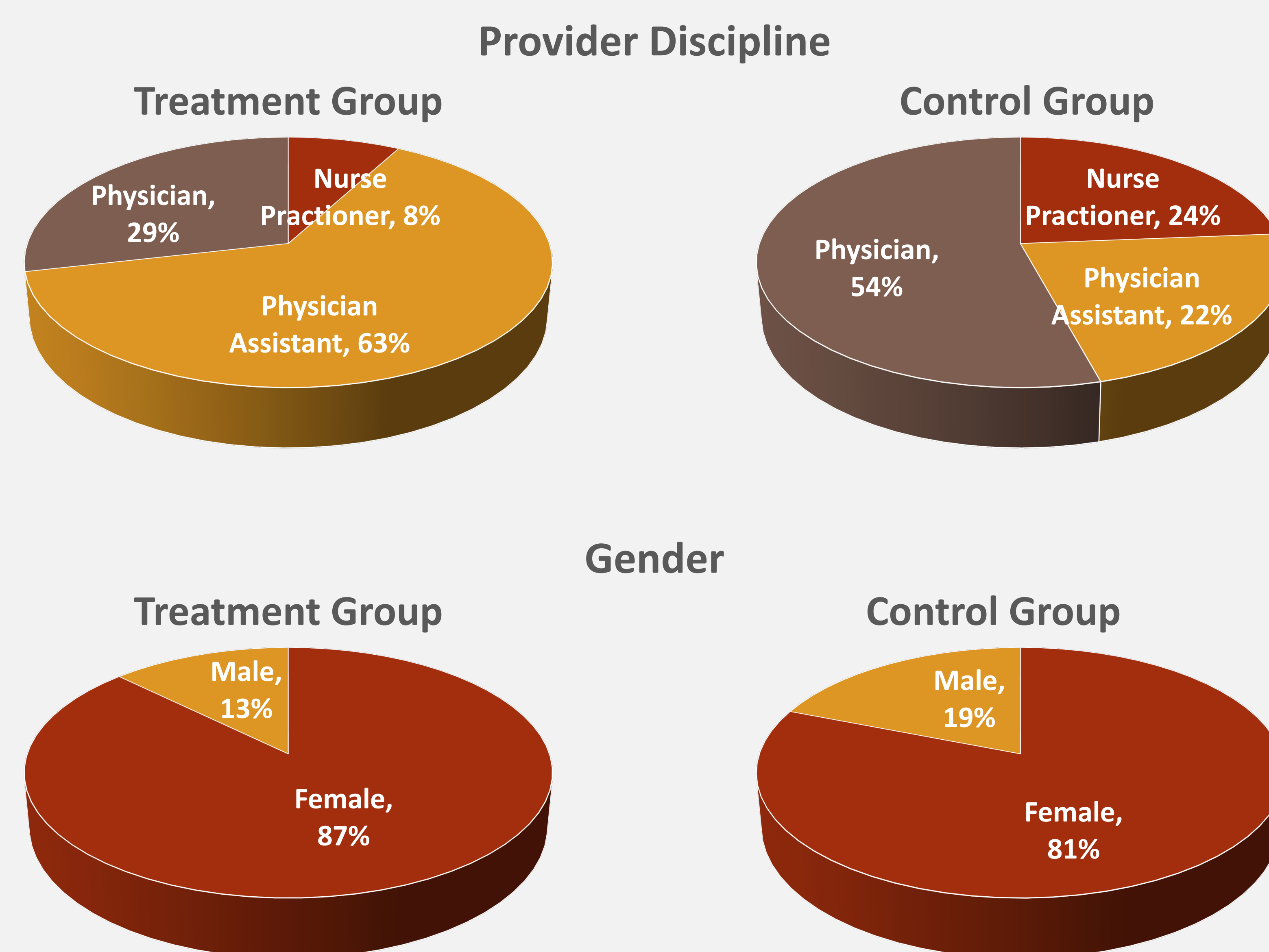
Patients with migraines frequently present to the emergency department (ED) for refractory headache management. Optimal treatment of these patients in the acute setting remains unclear. Recently data has emerged suggesting that exposure to butalbital-containing products during acute migraine attacks may predispose patients to worsening headaches, known as medication overuse headaches. **Medication overuse headaches are a type of headache disorder that may occur when a patient takes medication too frequently to treat their headaches, which results in a withdrawal or rebound type headache.** The primary objective was to assess multiple variables that may be associated with the prescribing of butalbital-containing products within the ED.

Methods

- This study was an IRB approved, retrospective analysis from December 1st, 2017 to May 31st, 2019.
- Inclusion criteria consisted of patients (18 and older) presenting to the ED with an ICD-10 code or sub-code for any type of headache.
- All patients within the study period and with appropriate ICD-10 codes were screened for the study.
- The treatment group consisted of any patient in the ED either **administered a butalbital-containing product or discharged with a prescription for a butalbital-containing product.**
- A control group was randomly chosen matching the number of patients within the treatment group from the remaining screened patients meeting inclusion criteria.
- Patient-related variables assessed included **age, gender, ethnicity, and weight** as well as the **discipline of the authorizing prescriber** of the butalbital product.
- Primary and secondary headache and psychological diagnoses were also evaluated between the groups.
- Patients with multiple admissions or multiple administrations in a single admission were counted as individual cases.

Results

- There were 126 total patients analyzed, which included 106 females and 20 males.
- The mean weight was 90.7 kg (SD ± 27.4 kg).
- The mean age was 44 years old (SD ± 15 years).
- Of the 63 patients in the treatment group, 60 received butalbital-acetaminophen-caffeine and 3 received butalbital-aspirin-caffeine.
- There was **no significant difference** ($p = 0.329$) in the prescribing of butalbital-containing products based on gender.
- Physician assistants prescribed butalbital-containing products at a **significantly higher rate** ($p < 0.0001$) than physicians and nurse practitioners.



Conclusions

- The most common type of headache presenting in this study was a migraine headache.
- No significant differences were noted in the prescribing rates of butalbital-containing products based on gender, age, ethnicity or weight.
- Physician assistants were significantly more likely to prescribe butalbital-containing products than physicians or nurse practitioners.

Limitations

- Retrospective, small (144 bed hospital) single site study with a small sample size ($n = 126$).
- The culture bias of the current opioid epidemic within the study time frame, may have contributed to some providers seeking alternative solutions for pain control.

Future Studies

- Investigate other variables contributing to prescribing rates of butalbital-containing products including prior use of butalbital-containing products, concurrent treatment with opioid medications, pain scores at time of administration, as well as time of day and year the product was prescribed.
- Investigate the varying education levels of providers and influence on the prescribing rates of butalbital-containing products for use in headaches.
- Compare prescribing rates of butalbital-containing products at multiple sites and over the past 10 years.

References

- Derosier F, Sheftell F, Silberstein S, et al. Sumatriptan-naproxen and butalbital: a double-blind, placebo-controlled crossover study. *Headache*. 2012;52(4):530-543. doi:10.1111/j.1526-4610.2011.02039.x
- Diener H-C, Holle D, Solbach K, Gaul C. Medication-overuse headache: risk factors, pathophysiology and management. *Nat Rev Neurol*. 2016;12(10):575-583. doi:10.1038/nrneurol.2016.124
- Feeney R. Medication Overuse Headache Due to Butalbital, Acetaminophen, and Caffeine Tablets. *J Pain Palliat Care Pharmacother*. 2016;30(2):148-149. doi:10.3109/15360288.2016.1167805
- Silberstein SD, McCrory DC. Butalbital in the treatment of headache: history, pharmacology, and efficacy. *Headache*. 2001;41(10):953-967. doi:10.1046/j.1526-4610.2001.01189.x
- Wenzel RG, Sarvis CA. Do butalbital-containing products have a role in the management of migraine? *Pharmacotherapy*. 2002;22(8):1029-1035. doi:10.1592/phco.22.12.1029.33595