

Offering Acupuncture to Patients in the Emergency Department Continues to Decrease Acute Pain!

John Burns, DPT, MSOM, CAC^{1,2}; Jessica J.F. Kram, MPH^{1,3,4}; Jeanne Stark Casadont, JM, RN, BSN, MSOM, CAC^{1,2}; Vashir Xiong, MSOM, CAC^{1,2}; Nancy Conway, MS^{1,2}; Dennis J. Baumgardner, MD^{1,3,4,5}
¹Aurora Health Care; ²Department of Integrative Medicine; ³Aurora University of Wisconsin Medical Group, Milwaukee, WI; ⁴Center for Urban Population Health, Milwaukee, WI; ⁵Department of Family Medicine

PROBLEM

Patients presenting with acute pain in the emergency department (ED) setting are often prescribed opioids, even though prescription-opioid overuse and misuse continues to be a problem within the United States.¹

BACKGROUND

- National guidelines have emphasized the use of nonpharmacologic treatment options for patients with acute pain in the ED setting.¹
- Acupuncture, a nonpharmacologic option, has been associated with improving various types of acute pain.²
- Acupuncture originated from traditional Chinese medicine and involves penetrating the skin with thin, solid, metal needles to produce analgesia and other therapeutic effects.
- In our previous study, acupuncture was found to be an effective nonpharmacological approach to managing pain, regardless of analgesics received during the visit.³



OBJECTIVE

The purpose of this study was to determine if two years after our initial study and program onset, acupuncture continues to improve pain scores regardless of analgesics used during ED visits.



METHODS

- We retrospectively reviewed patients from 2019 who accessed our ED acupuncture program.
- As per our previously published work in 2017, acupuncture services were offered to patients ≥ 18 years of age based on their:
 - Emergency severity index (ESI; highest severity [1] - lowest severity [5]),
 - Reason for visit,
 - And physician recommendation
- Only patients' first visit in 2019 was included in analyses.
- Statistics:
 - Basic summary statistics were used to describe patient characteristics.
 - Paired T-tests were used to determine differences in pre- and post-acupuncture pain, stress, anxiety and nausea scores (i.e., no pain [0] - worst pain [10]).
 - Logistic regression models were used to determine associations between improvements in pain and patient or visit characteristics.

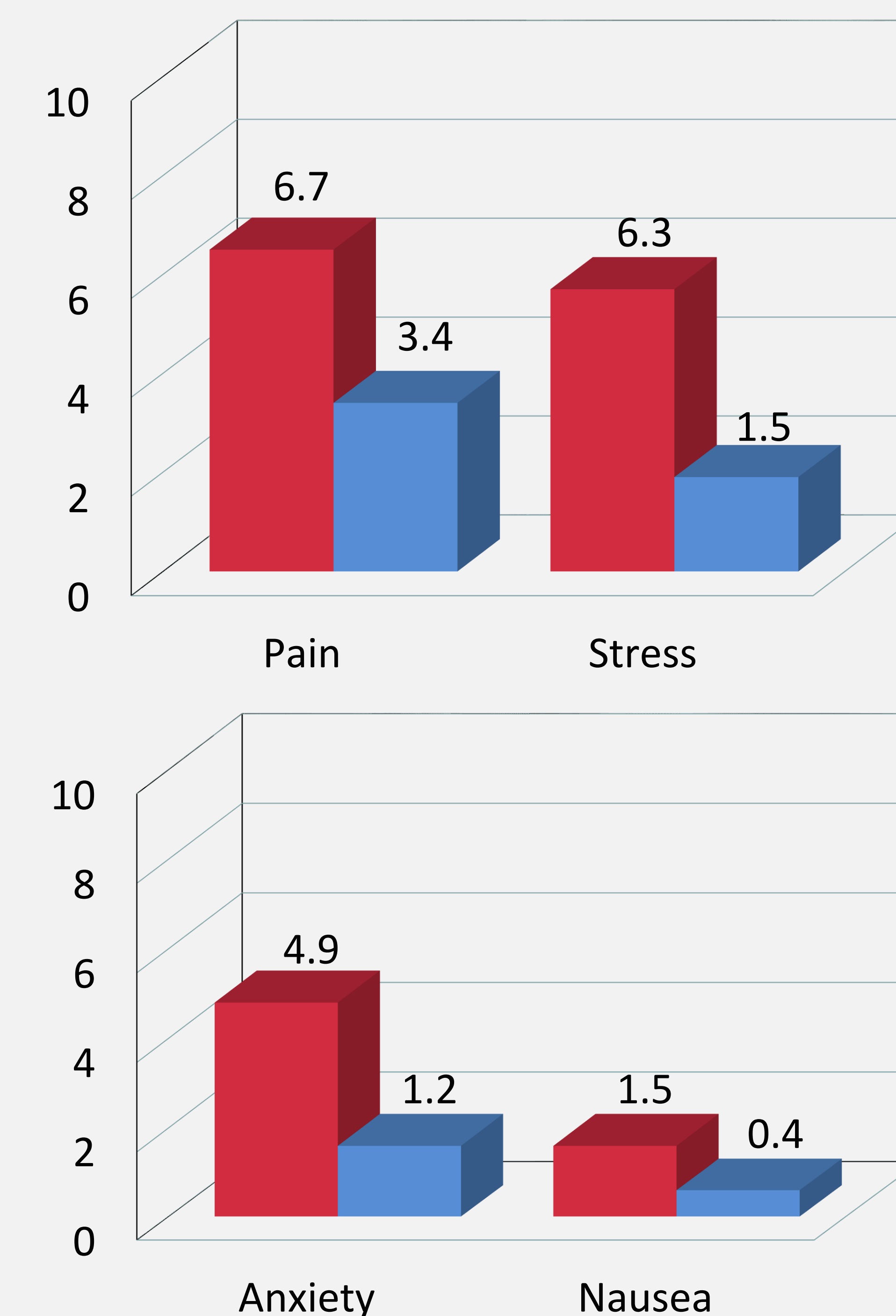
RESULTS

- Acupuncture services were provided to 199 patients (mean age 47.5 years, BMI 32.0 kg/m²), who were predominately female (78.4%), White non-Hispanic (70.4%), with an ESI score of 3 (63.3%) or 4 (31.2%).
- As in 2017, mean pre- and post-acupuncture scores for pain, stress, anxiety, and nausea significantly decreased (all P 's < 0.001; **Figure 1**).
- Most patients had a final acute pain related diagnosis for neck/back pain (41.9%), abdominal pain (18.7%), or head/headache (14.7%).
- Improved pain scores were not associated with any patient characteristics.
- Similar to 2017, receiving opioids only during the ED visit was not associated with improved pain scores ($P=0.21$), nor was receiving non-steroidals ($P=0.07$) or tramadol ($P=0.42$).
- However, receiving any pain medication in the ED was associated with improved pain scores ($P=0.028$). Improved pain scores did not predict for receiving any pain medications, including opioids, at discharge (all P 's > 0.05).

CONCLUSIONS

- When compared to our findings in 2017, ED acupuncture continues to show significantly decreased pain, stress, anxiety, and nausea.
- Our findings continue to support ED acupuncture for acute pain in the ED settings, and further support the need for a larger randomized controlled trial.

Figure 1. Mean Pre- and Post-Acupuncture Scores



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REFERENCES

1. ED Medicine: Emergency Department Pain Management: Beyond Opioids (Pharmacology CME and Pain Management CME). Accessed online 4/8/2020 <https://www.ebmedicine.net/topics/pain-management/nonopioid#Introduction>.
2. Xiang A, Cheng K, Shen X, Xu P, Liu S. The Immediate Analgesic Effect of Acupuncture for Pain: A Systematic Review and Meta-Analysis. *Evid Based Complement Alternat Med*. 2017;2017:3837194. doi:10.1155/2017/3837194
3. Burns JR, Kram JJ, Xiong V, Stark Casadont JM, Mullen TA, Conway N, Baumgardner DJ. Utilization of acupuncture services in the emergency department setting: a quality improvement study. *J Patient Cent Res Rev*. 2019;6:172-8. doi:10.17294/2330-0698.1688