

# Manipulation of attention and expectancy within an open-label placebo treatment for experimental pain



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## BACKGROUND

Chronic pain is a prevalent condition that disrupts daily life and remains difficult to treat effectively. While traditional treatments often focus on pharmacological interventions, growing evidence suggests that placebo effects are an effective way of treating pain. A placebo effect is a psychological or physical response that occurs following the administration of an inert or non-active treatment. Emerging research suggests deception is not necessary to elicit placebo effects, and so-called “open-label placebos” are almost as effective as deceptive placebos. Researchers believe placebos work not because of their physical properties, but because individuals expect them to work. Further, paying attention to signs that are in-line with those expectancies may bolster this effect (Barbiani et al., 2024). Understanding how expectancy and attention contribute to placebo effects is critical to harnessing them for clinical practice. Our objective is to investigate the effectiveness of the manipulations of expectancy and attention within a larger open-label placebo experiment.

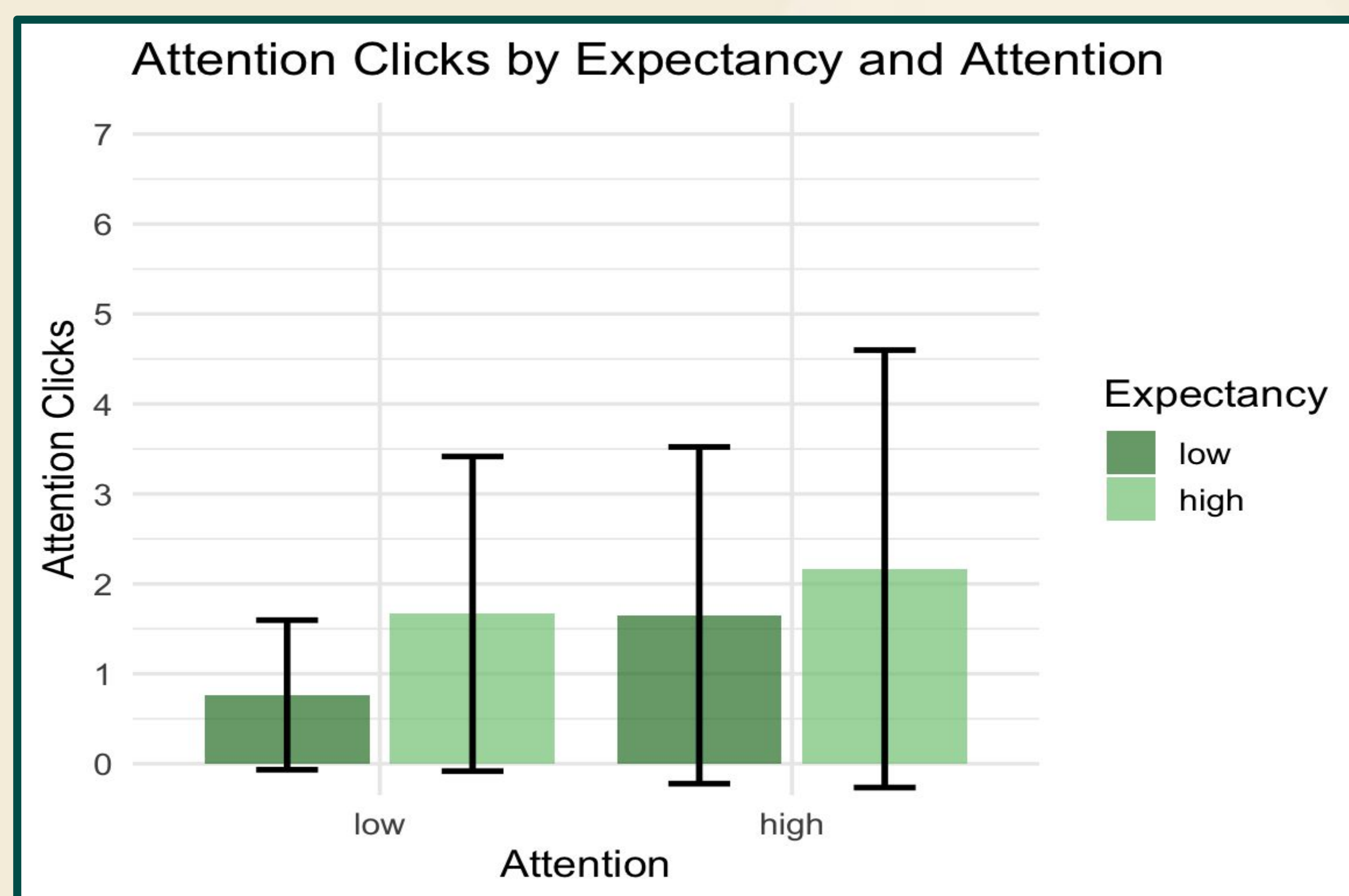
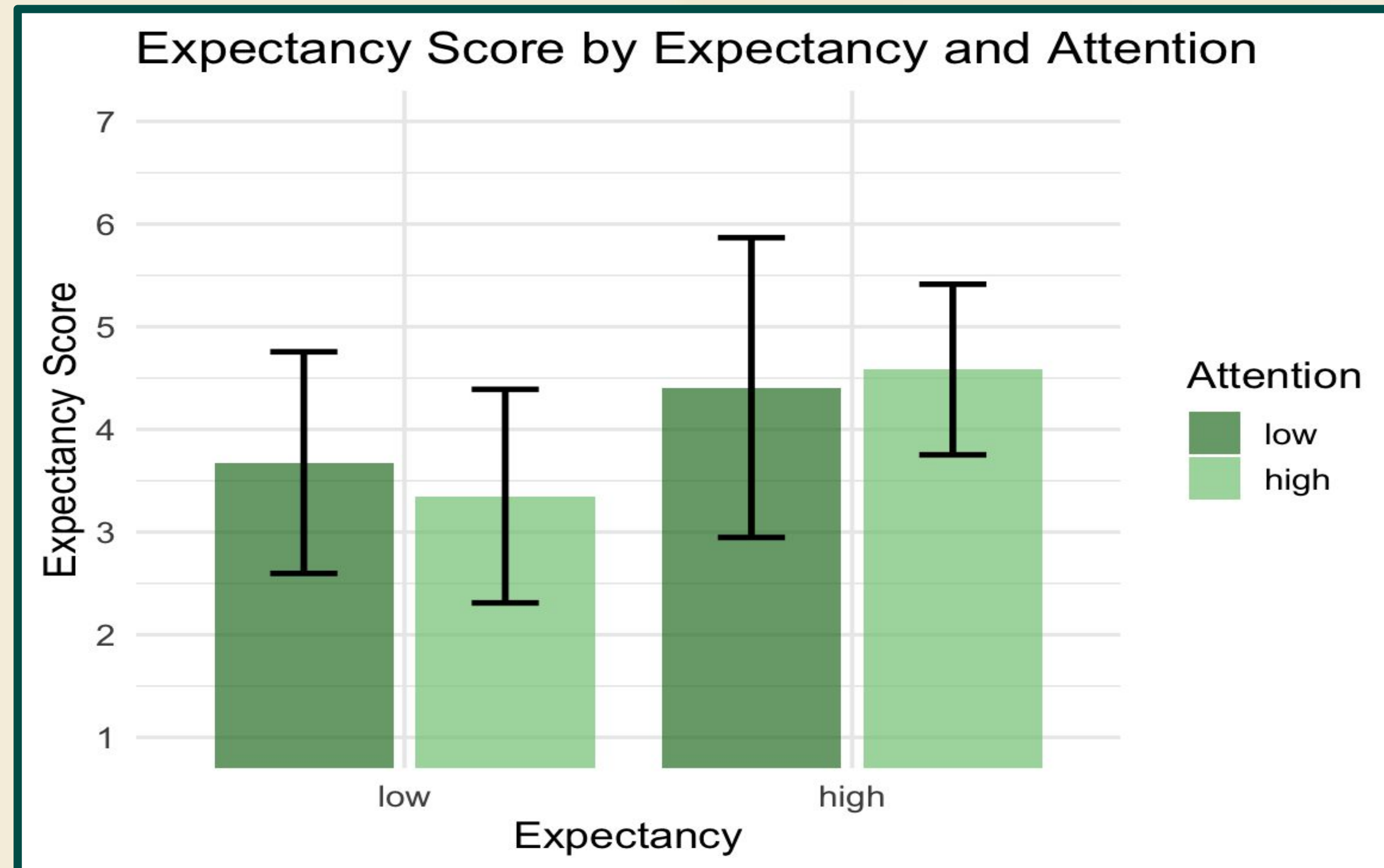
## METHODS

Data used in this project were collected as part of a larger thesis on expectancy and attention within open-label treatment for pain. Expectancy and attention were manipulated to either be high or low, within a 2X2 between subjects design. The original study also included a no-treatment group.

### Procedure

- Expectancy manipulation
  - High expectancy:** verbal explanation that placebos are effective.
  - Low expectancy:** verbal explanation that placebos are ineffective.
- Expectancy manipulation check items
  - Six items, 1-7 Likert Scale, items such as “I expect this cream to work for me.” (Kube et al., 2020). Higher scores indicate higher expectancy.
- Placebo administration (inert topical cream)
- Three minute waiting period
  - Attention manipulation (high or low)**
  - Tally counter that participants “clicked” if they felt anything happening in their hand (**attention manipulation check**). More clicks indicate more attention.
- Pain Trial
  - Placebo response measured as pain tolerance (seconds immersed) and pain rating (NRS 1-10)

Current work investigates main effects of expectancy and attention on manipulation check variables.



## RESULTS

- A 2x2 Analysis of Variance indicates there was a **main effect for expectancy**,  $F(1, 69) = 13.89, p < .001, \eta^2 = .17$ , such that participants held higher treatment expectancies in the high expectancy conditions ( $M = 4.5, SD = 1.18$ ) compared to the low expectancy conditions ( $M = 3.5, SD = 1.06$ ). No other effects in the model were significant.
- A 2x2 Analysis of Variance indicates there was **no main effect for attention**,  $F(1, 69) = 2.62, p = .11, \eta^2 = .035$ , such that participants did not click the attention clicker more if they were in the high attention ( $M = 1.89, SD = 2.14$ ) compared to low attention ( $M = 1.22, SD = 1.43$ ) conditions. No other effects in the model were significant.

## DISCUSSION

Overall, expectancy scores were sensitive to manipulations. This indicates the manipulation was effective, replicating both the manipulation method and the manipulation check questionnaire. Attention manipulation failed, possibly due to inadequate manipulation or measurement. Future research should explore new methods of both measuring and manipulating attention, uncovering more about underlying pain management mechanisms.

## REFERENCES

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- Kube, T., Rief, W., Vivell, M.-B., Schäfer, N. L., Vermillion, T., Körfer, K., & Glombiewski, J. A. (2020). Deceptive and nondeceptive placebos to reduce pain: An experimental study in healthy individuals. *The Clinical Journal of Pain*, 36(2), 68–79. <https://doi.org/10.1097/AJP.0000000000000781>