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COPAHS: COPING WITH PAIN THROUGH HYPNOSIS, MINDFULNESS AND SPIRITUALITY

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Background: Hypnosis, mindfulness meditation, and prayer have been shown to be effective as strategies to self-management chronic pain, but their effects on acute pain have been less studied. No prior research compared, in a head-to-head study, the immediate effects, and mechanisms (mediators and moderators) of these three self-management approaches on pain-related outcomes. This study sought to fill this knowledge gap.

Aims: Compare, in the same study, the immediate effects, as well as the unique and shared predictors, and treatment-specific enhance moderators of the effects, of hypnosis (HYP), mindfulness meditation (MM), and a biblical-based meditation prayer (MP) on cold pressor outcomes.

Method: The study protocol was pre-registered at the ClinicalTrials.gov registry (NCT04491630). A sample of 232 healthy adults were randomly assigned to the MM, the HYP, the MP, or an attention control (CN) condition. Participants underwent a pre- and a post-intervention cycle of Cold Pressor Arm Wrap (CPAW). The 20-min single sessions of MM, HYP, MP, or CN, were audio-delivered. Individuals were assessed for pain intensity immediately after each CPAW cycle. Pain tolerance (sec) was evaluated during the CPAW cycles. HRV was evaluated at baseline, and during the CPAW cycles. Post-hoc pairwise comparisons used Bonferroni adjusted α 's.

Results: Relative to within-group comparisons, from the pre- to the post-test, (1) small decreases in pain intensity, (2) small increases in pain tolerance, and (3) small improvements in the LH/HF ratio, were observed. In regard to the exploratory between-group pairwise effect sizes comparisons (1) medium effect size ($d = .66$) effects of HYP on pain tolerance as compared to the CN, and (2) small positive ($d = .28$), yet non-statistically significant (*ns*), effects of CP relative to CN, were found. Small to medium *ns* Time X Group interaction effects were found ($.025 < \eta^2_p < .077$). The effects of HYP were predicted/moderated by outcome expectations, hypnotizability, and religious denomination; those of MM were predicted/moderated by spirituality and religiosity; and those of MP were predicted/moderated by outcome expectations, and mindfulness trait.

Conclusions: These findings suggest that single short-term session of HYP and MM, but not MP, may be useful self-management strategies for acute pain, with HYP being a slightly superior option, especially for those individuals with higher hypnotizability, and with greater HYP-related outcome expectations.

Keywords: Acute pain, Self-management, Cold pressor, Hypnosis, Meditation

Publications:

- Ferreira-Valente, A., Jarego, M., Queiroz-Garcia, I., Pimenta, F., Costa, R. M., Day, M. A., Pais-Ribeiro, J., & Jensen, M. P. (2021). Prayer as a pain intervention: Protocol of a systematic review of randomised controlled trials. *BMJ Open*, *11*(7), e047580. <https://doi.org/10.1136/bmjopen-2020-047580>
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