BRIEF MEDITATION TRAINING FOR MIGRAINEURS AFFECTS EMOTIONAL AND PHYSIOLOGICAL STRESS REACTIVITY

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Introduction

- Migraines headaches create a significant burden of pain, impaired work productivity, and reduced quality of life for 13.2% of the US population.[1]
- Migraine frequency, severity, and duration may be related to emotional and physiological stress.
- The vascular component of migraines suggests a significant role for HPA activity which could be influenced by emotional and physiological stress.[2]
- In turn, effectively reducing multi-dimensional stress reactivity may lead to fewer headaches.

Hypothesis

A meditation intervention designed to reduce physiological and emotional reactivity to stressors will result in fewer migraine headaches.

Participants

- 88 Community recruited meditation naïve frequent migraineurs

	Mean	SD
Age	41.8	12.77
Migraines/month	9.3	6.65

Female 80.7 %

Ethnicity

Europe Origin	86.2%
Asia Origin	6.9%
Africa Origin	1.1%
Latino/a	3.4%
Multi Racial	2.2%

Education

< Bachelors	57.9%
>Bachelors	42.1%

Relationship Status

Single	26.1%
Married/LAM	60.2%
Divorced	13.6%

Employment

Full-time	70.1%
Part-time	6.9%
Unemployed	16.1%
Retired/Student	6.9 %

Method: Procedure

- Approved by the UMass Medical School IRB
- Individuals were screened for migraines using Migraine ID[3]
- Participants were consented and randomly assigned to Meditation Training or Education-Control
- Completed daily migraine/meditation logs
- Assessments were completed pre-, post-, and 4-week follow up

Sessions

- 4 weekly, 90-minute, group sessions
- Meditation training
  - Role of inter and intra personal stress on migraines
  - Loving-Kindness meditation (practiced 20 min/day)
  - Reducing reactivity to stress
- Education-control
  - Migraine demographics
  - Migraine assessment
  - Treatment options

Method: Assessments

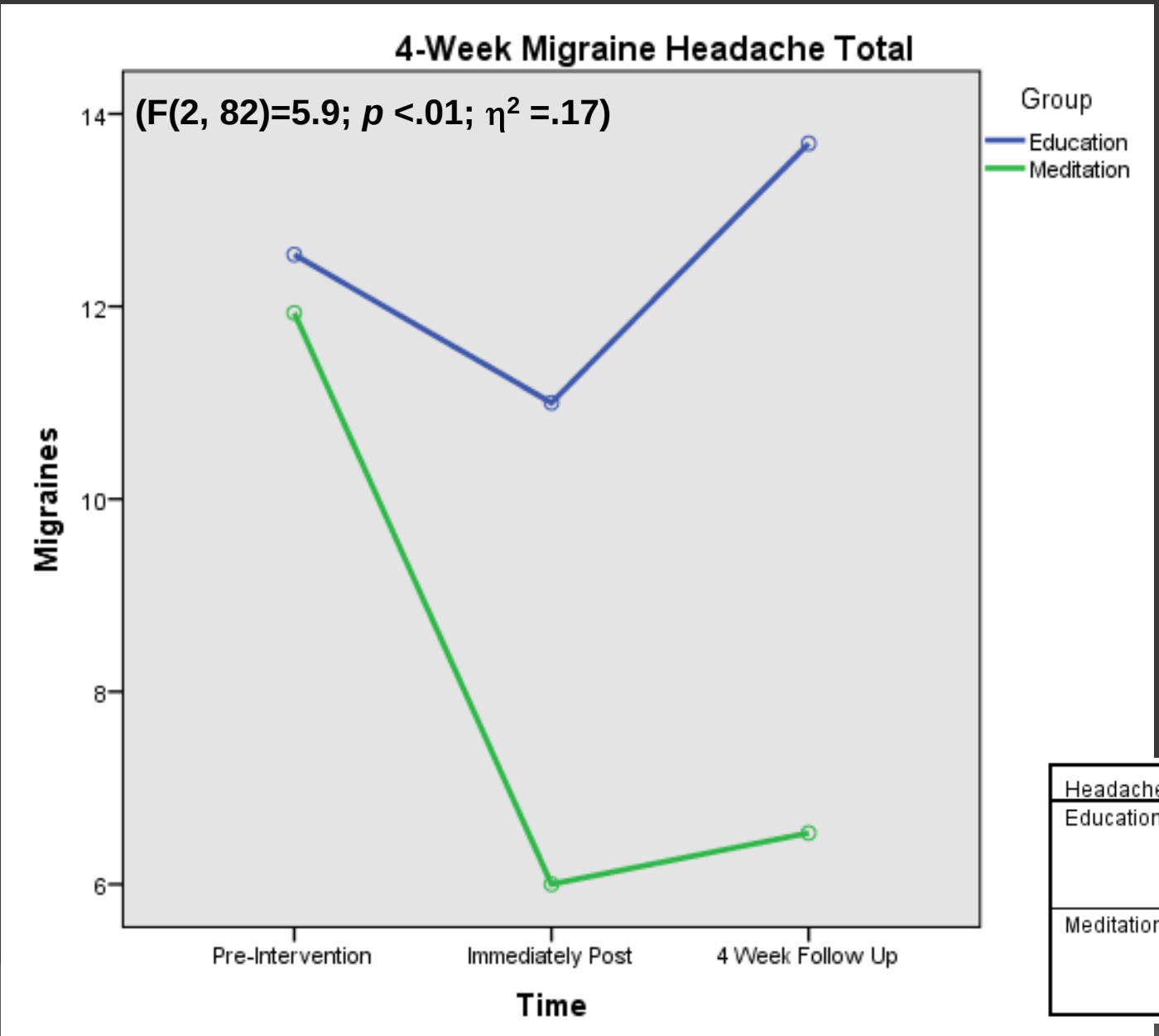
- *State Anxiety Inventory(SAI)* is a 20-question survey measuring State Anxiety[4].
- *Galvanic Skin Response(GSR)* was measured using Physiolab and J&J Engineering C+6 biofeedback equipment

- Participants were physiologically (GSR) monitored:
  - 5 minute - Baseline
  - 5 minute - Mental arithmetic stress test (Base-Stress = Reactivity)
  - 5 minute – Recovery
  - Participants completed SAI in response to the stressor.

Method: Data Analysis

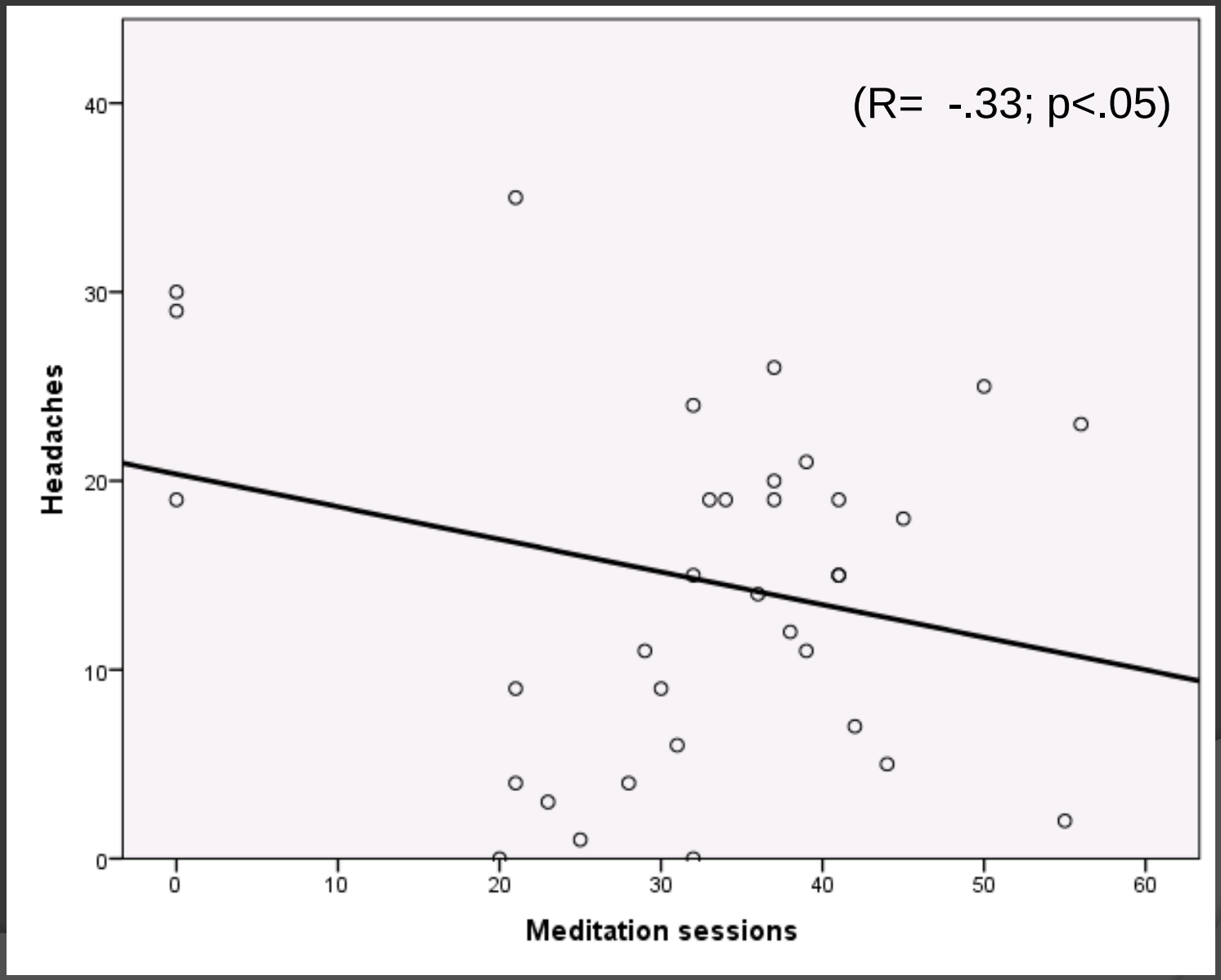
- Pearson R's
- 3x2 (time x group) repeated measures ANOVAs
- SPSS v20
- Intent to treat analyses

Headache x Group

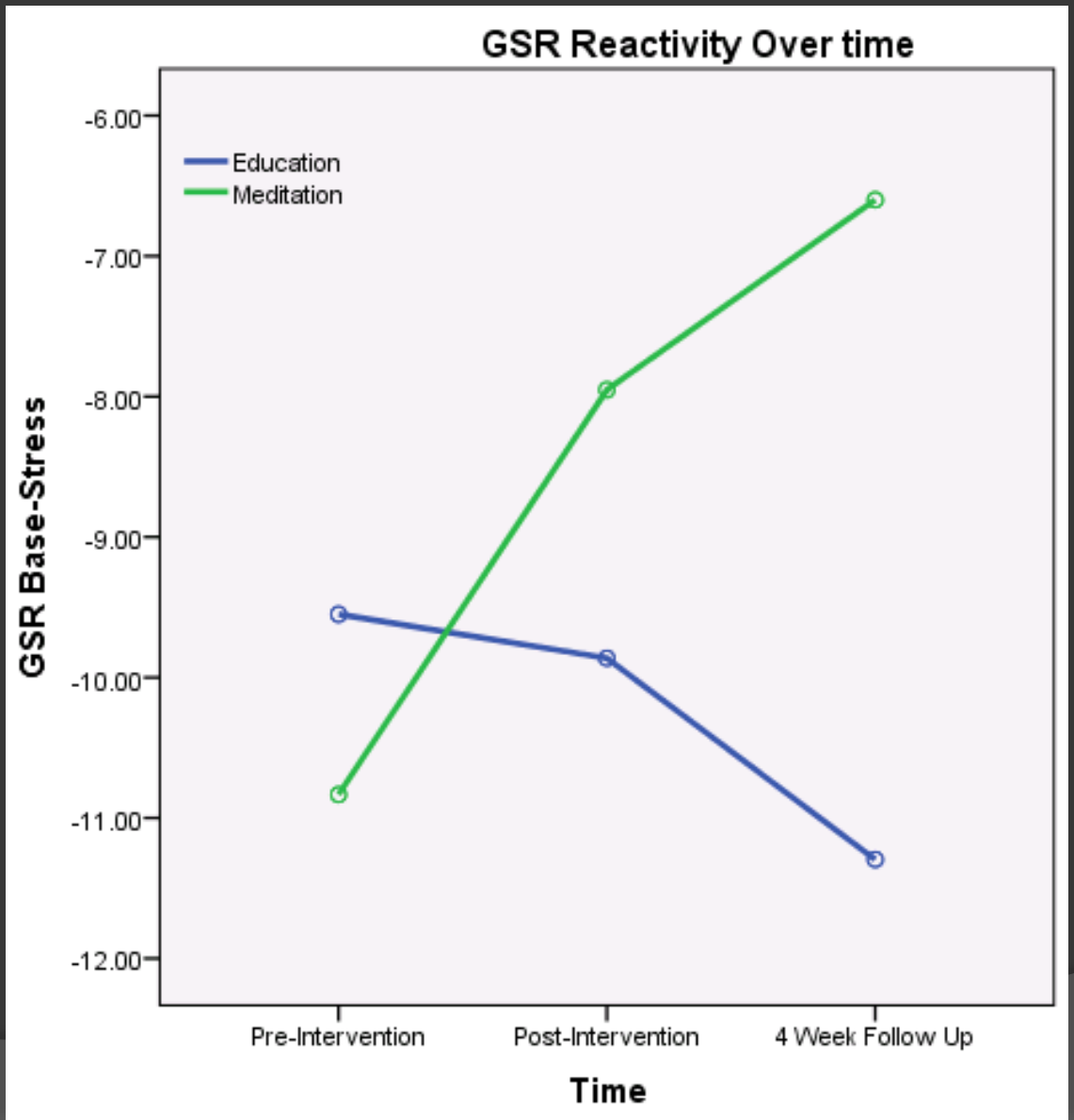


Headache		Mean	Std. Error
Education	Pre	12.538	1.666
	Post	11.200	1.038
	4 Week Post	13.692	.793
Meditation	Pre	11.933	1.097
	Post	6.010	.881
	4 Week Post	6.533	.908

Meditation Frequency x Headaches



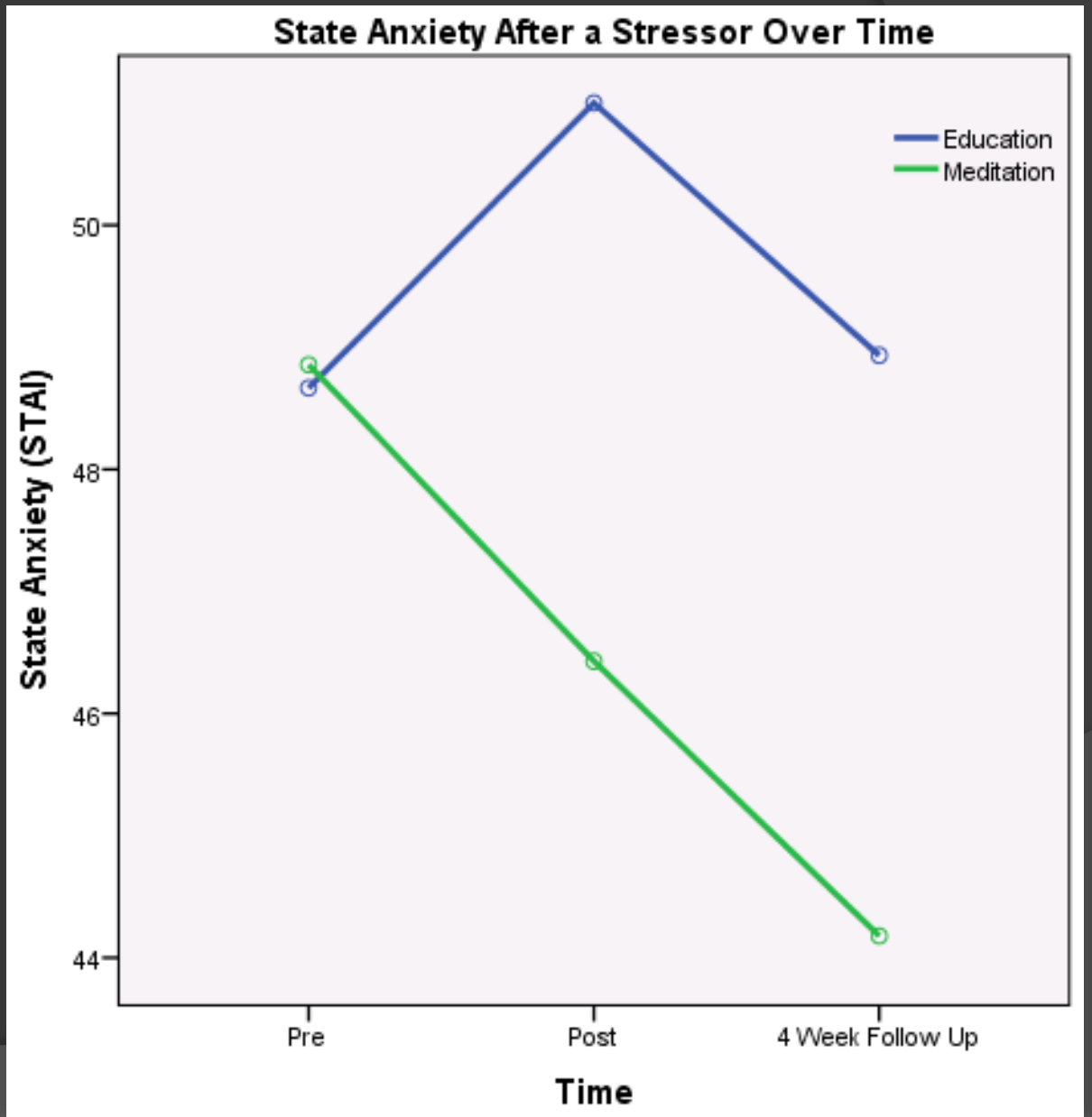
Physiological Stress Reactivity x Time



(F (2,74) = 6.4 $p < .01$; $\eta^2 = .27$)

GSR Reactivty		Mean	SD
Education	Pre	-9.550	2.373
	Post	-9.863	2.839
	4 Week Post	-11.296	2.485
Meditation	Pre	-10.833	1.582
	Post	-7.952	1.893
	4 Week Post	-6.600	1.656

State Anxiety x Time



($F(2,82) = 3.0$ $p < .05$; $\eta^2 = .08$)

STAI		Mean	SD
Education	Pre	48.667	2.383
	Post	51.000	2.405
	4 week	48.933	1.557
Meditation	Pre	48.857	1.744
	Post	46.429	2.760
	4 week	44.179	1.872

Conclusions

- Brief meditation training can be effective in treating patients with frequent migraine headaches

- Reduces:
  - Emotional stress reactivity by 10%
  - Physiological stress reactivity by 40%
  - Migraine headaches by 50%

Implications

- Informs of the length of time needed to train patients before treatment is effective for patients with chronic and intermittent pain

- Supports further investigation into brief pain management psychological interventions to reduce stress response in disease processes that include a stress-related component

References

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Thank you

Questions?

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