Can migraine features, hypersensitivity or cervical musculoskeletal dysfunction explain neck disability in migraine?

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OBJECTIVE: To investigate the predictors of neck disability in migraine, measured by the Neck Disability Index (NDI)

METHODS:

- NDI recorded in 104 migraineurs (episodic and chronic) with neck pain
  - Migraine and neck pain features, Headache Impact Test (HIT6)
  - Hypersensitivity (Allodynia Symptom Checklist (ASC12), Pressure Pain Thresholds (PPTs): Forehead, neck and remote site).
  - Cervical dysfunction was present in 43% of these individuals.[1]
- Simultaneous multiple linear regression of NDI score was performed using the following predictors:
  - Migraine (history, intensity and frequency), HIT6, total PPT, ASC12 and presence of cervical dysfunction
  - While accounting for neck pain features (history, intensity and frequency) which are most likely to influence NDI scores

RESULTS:

- Significant predictors of NDI scores were:
  - **Neck pain intensity** (B=2.26, p<0.001), **neck pain frequency** (B=5.08, p<0.001), **ASC12** (B=0.71, p=0.018), **HIT6** (B=0.42, p=0.049)
- Cervical dysfunction was not a significant predictor when all the other variables were accounted for.
- Analyses were performed to determine if cervical musculoskeletal dysfunction was predictive of other versions of NDI
- Presence of cervical musculoskeletal dysfunction did not predict scores of any NDI versions:
  - NDI-physical: X2=0.038, df=1, p=0.85
  - NDI-mental: X2=0.246, df=1, p=0.62
  - NDI-8: X2=0.010, df=1, p=0.92
  - NDI-5: X2=0.274, df=1, p=0.60

CONCLUSIONS:

The NDI is a complex measure of neck disability in migraine that is related to headache disability and allodynia. When neck pain features, headache and allodynia are taken into account, presence of cervical musculoskeletal dysfunction did not contribute to NDI scores.

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[1]Liang Z, Thomas L, Jull G, Zareie H, Minto J, Treleaven J. Neck pain associated with migraine does not necessarily reflect cervical musculoskeletal dysfunction. *Headache*. 2021;61:882-94