

ASSOCIATION BETWEEN PAIN EXTENT AND HEALTH STATUS IN WHIPLASH ASSOCIATED DISORDERS

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BACKGROUND AND AIM

Whiplash associated disorders (WAD) are a complex phenomenon associated with relevant social and economic burdens. Many people with chronic WAD show widespread pain which can be observed from the patient's pain drawing. No studies have evaluated the relation of pain extent to perceived . To evaluate the relation of pain extent to a number of variables related to the patients' perceived pain and disability, their financial status, general health and psychological status.

MATERIALS AND METHODS

A total of 205 individuals with chronic WAD grade 2 or 3 were selected. Patient completed a series of questionnaires which detailed their sex, age, history of neck pain, disability, health and psychological aspects, and work related factors. The main outcome measure was pain extent, extracted from the pain drawing. Pain extent were expressed as the percentage of the total body chart area (Fig 1). Pain frequency maps were generated for descriptive purposes (Fig 2). Pain extent was evaluated in relation to sex, age, educational level, insurance status and financial status. Multiple linear regression analysis was then used to verify whether pain extent was significantly associated with the other health indicators including perceived pain intensity and disability, health-related quality of life, pain catastrophizing, anxiety, depression and self-efficacy.

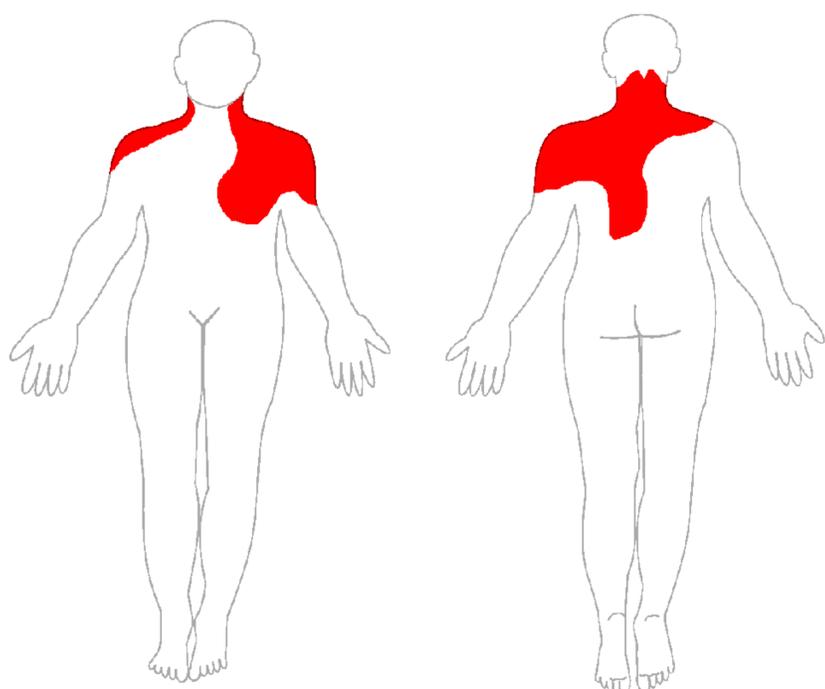


Figure 1 A body chart by a representative patients with WAD

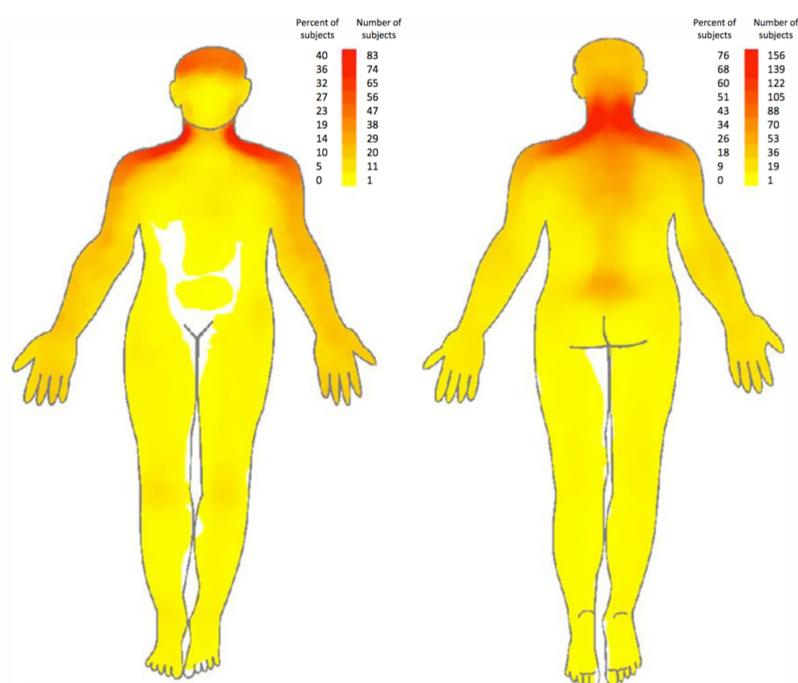


Figure 2 Pain frequency maps generated by superimposing the pain drawings of all patients included in the study (n=205).

RESULTS

Pain extent was influenced by sex of patient (χ^2 : 10.392, $p < 0.001$) with larger pain extent in women compared to men ($7.88 \pm 7.66\%$ vs. $5.40 \pm 6.44\%$). People with unsettled insurance claims (χ^2 : 7.500, $p < 0.05$) and those with a worse financial situation (χ^2 : 12.223, $p < 0.01$) also had larger pain extent. Multiple linear regression models revealed that, when accounting for age, sex, education, insurance status, financial status and neck pain intensity, pain extent remained associated with perceived disability ($p < 0.01$), depression ($p < 0.05$) and self-efficacy ($p < 0.001$).

CONCLUSIONS

Women with chronic WAD, those with unsettled insurance claims and those with poorer financial status reported more widespread pain. When controlling for these factors, larger pain areas remained associated with perceived pain and disability, depression and self-efficacy. Pain drawings support the clinical evaluation of people with chronic WAD.

REFERENCES

1. Barbero M, Moresi F, Leoni D, Gatti R, Egloff M, Falla D. Test-retest reliability of pain extent and pain location using a novel method for pain drawing analysis. Eur J Pain. 2015 Sep;19(8):1129-38.
2. Leoni D, Falla D, Heitz C, Capra G, Clijsen R, Egloff M, Cescon C, Baeyens JP, Barbero M. Test-retest reliability in reporting the pain induced by a pain provocation test: further validation of a novel approach for pain drawing acquisition and analysis. Pain Pract. 2016 Mar 15.