Phenotypes of painful TMD in discordant monozygotic twins

Laís Valencise Magri[1,2,3]; Melissa de Oliveira Melchior[2,4]; Graziela Valle da Silva[4]; Edilaine Cristina Da Silva Gherardi-Donato[4]; Christie Ramos Andrade Leite-Panissi[1]

[1]Departamento de Psicologia, Faculdade de Filosofia Ciências e Letras de Ribeirão Preto, Universidade de São Paulo, Ribeirão Preto/São Paulo – Brasil.
[2]Departamento de Odontologia Restauradora, Faculdade de Odontologia de Ribeirão Preto, Universidade de São Paulo, Ribeirão Preto/São Paulo – Brasil.
[3]Universidade de Ribeirão Preto, Curso de Odontologia, Ribeirão Preto/São Paulo – Brasil.
[4]Departamento de Enfermagem Psiquiátrica, Escola de Enfermagem de Ribeirão Preto, Universidade de São Paulo, PAHO/WHO Collaborating Centre for Nursing Research Development, Ribeirão Preto/São Paulo – Brasil.

TU465

laisvm@forp.usp.br

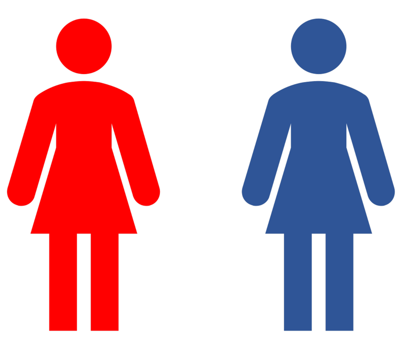
Authors deny any conflict of interest

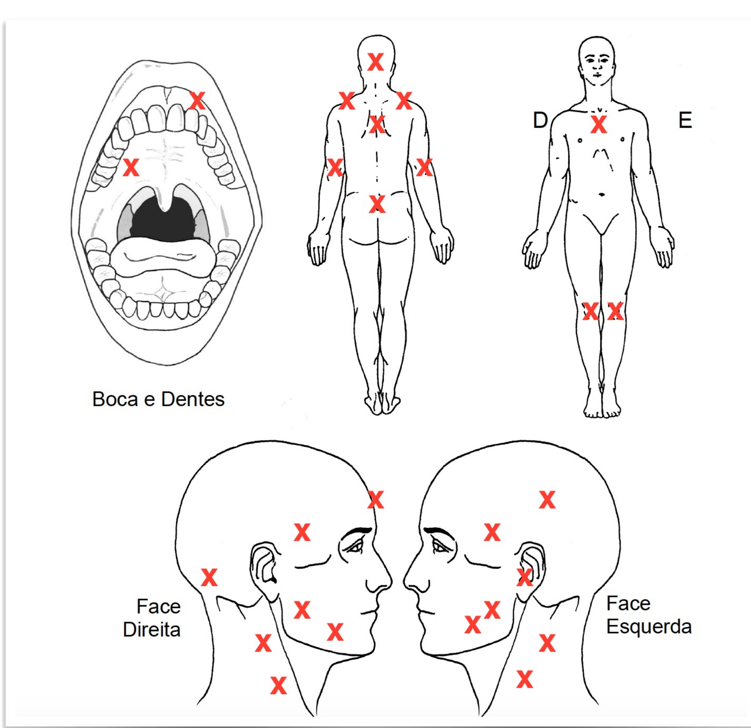
OBJECTIVES

This case-control study aimed to **investigate cognitive-behavioral-emotional variables** associated with the development of **painful temporomandibular disorders (TMD)** in a sample of **monozygotic twins discordant** for the condition.

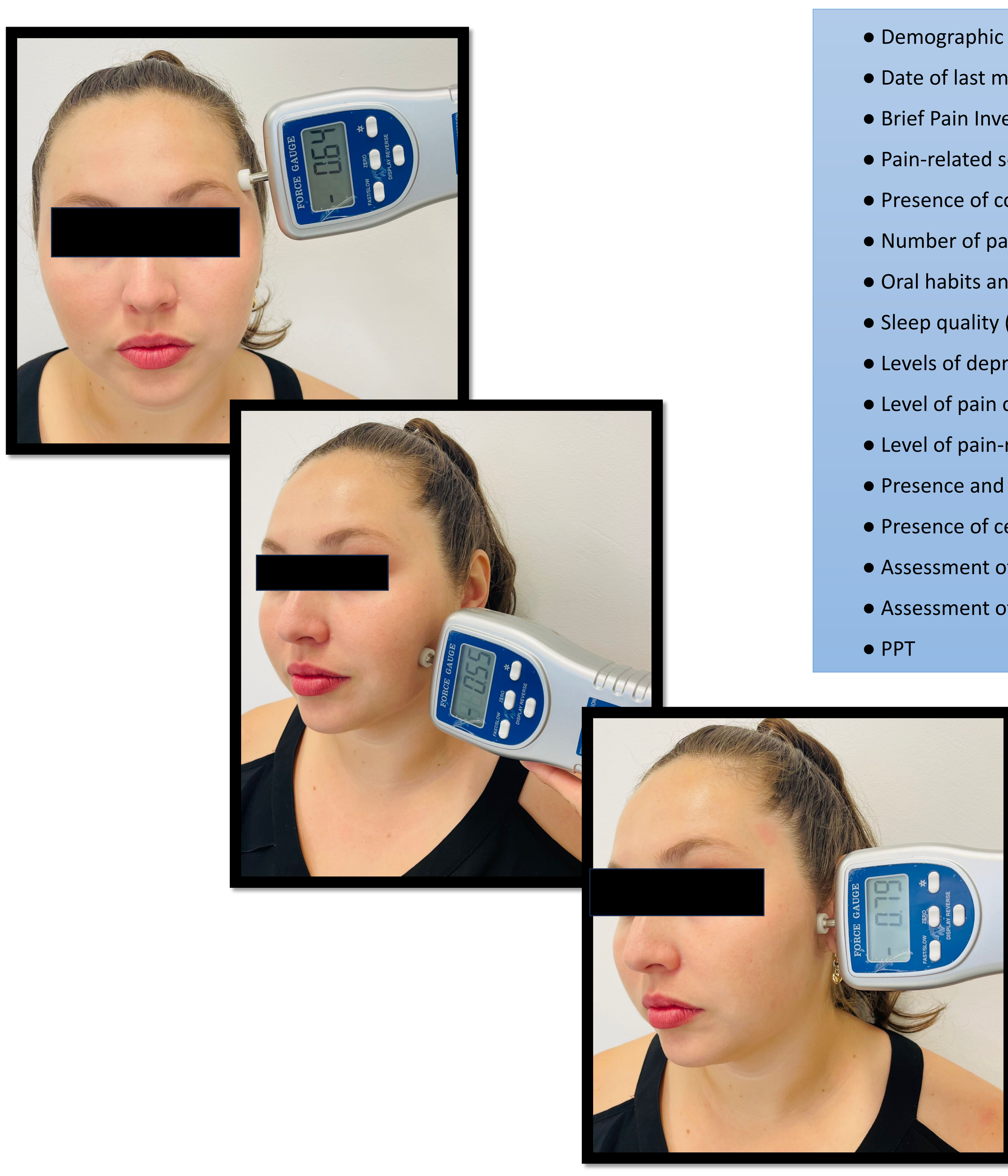
MATERIALS AND METHODS

Twenty monozygotic twins (**10 pairs discordant for painful TMD**), aged between 18 and 55 years, were included. Painful TMD diagnosis was based on the Diagnostic Criteria for Temporomandibular Disorders - Brazilian Portuguese (DC/TMD). Analyzed **cognitive-behavioral-emotional variables** included sociodemographic profile, pain sensitivity, oral behaviors, pain vigilance and awareness, pain catastrophizing, central sensitization, stress, anxiety, depression, alexithymia, mindfulness facets, sleep quality, pain control, pain intensity and interference, trigeminal and extra trigeminal pain areas.





DC/TMD



- Demographic data
- Date of last menstruation and contraceptive use.
- Brief Pain Inventory (BPI Reduced Version)
- Pain-related self-efficacy (Pain-related Self-Efficacy Questionnaire, PSEQ).
- Presence of comorbidities (painful or not); the presence of comorbid diseases of a painful or not painful nature was checked.
- Number of pain areas in trigeminal and extra trigeminal regions.
- Oral habits and behaviors (Oral Behavior Checklist).
- Sleep quality (Pittsburgh Sleep Quality Index, PSQI).
- Levels of depression, anxiety, and stress (Depression, Anxiety, and Stress Scale, DASS-21).
- Level of pain catastrophizing (Pain Catastrophizing Scale, PCS);
- Level of pain-related attention, awareness, and vigilance (based on the Pain Vigilance and Awareness Questionnaire, PVAQ);
- Presence and degree of alexithymia (Toronto Alexithymia Scale - 20 items).
- Presence of central sensitization (Central Sensitization Inventory, CSI).
- Assessment of levels of mindfulness (Five Facet Mindfulness Questionnaire, FFMQ).
- Assessment of Locus of control of the specific health condition (Multidimensional Locus of Health Control Scale - Form C, MHLC-C).
- PPT

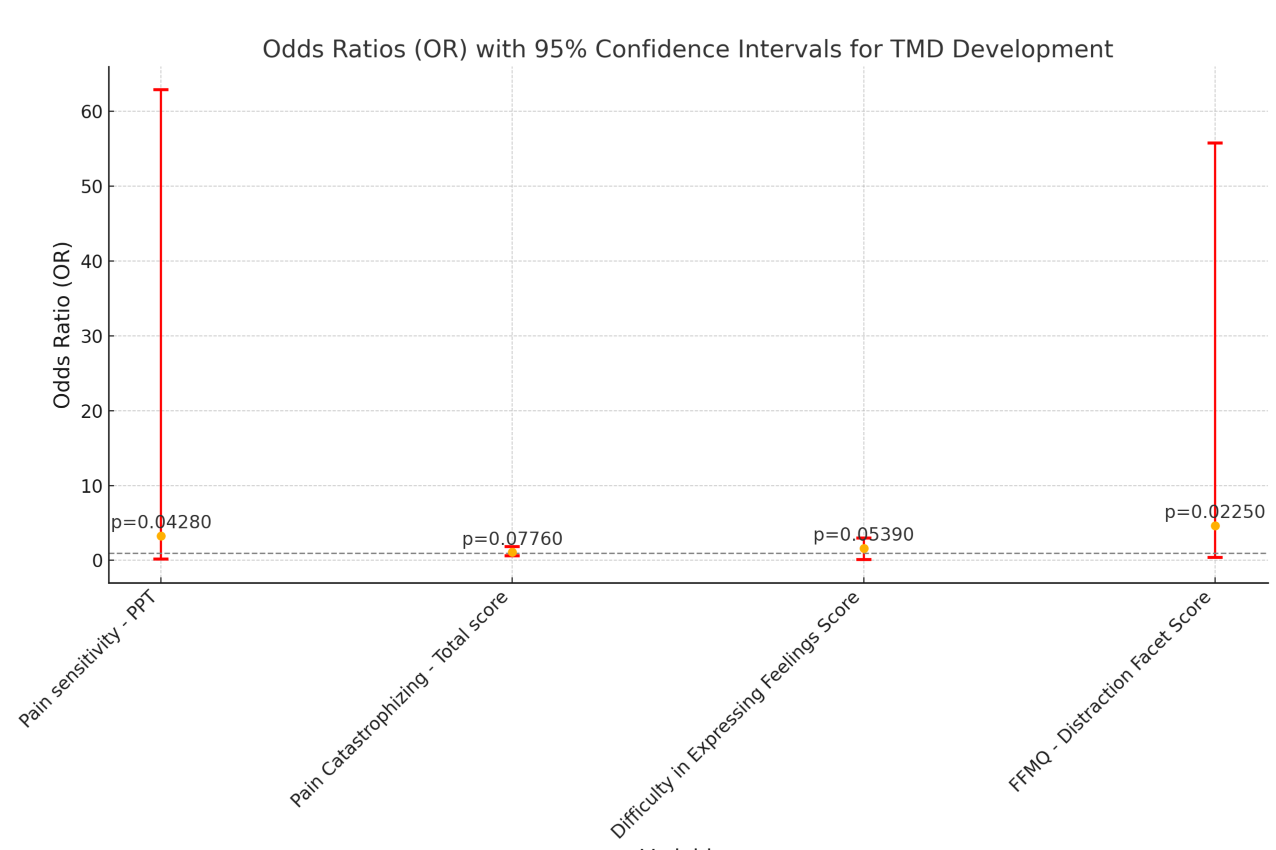
This study was conducted at the School of Dentistry of Ribeirão Preto (University of São Paulo, Brazil), and approved by the Research Ethics Committee of the same institution, under protocol 98129918.6.0000.5407

RESULTS

Adjusted regression analysis revealed an increased likelihood of TMD with an increasing left-sided masseter face **pain sensitivity** score (OR=3.29; 95%CI=(0.17-62.8), p=0.0428), an increasing total **pain catastrophizing** score (OR=1.08; 95%CI=(0.64-1.8), p=0.0776), an increasing **difficulty in externalizing feelings** score (OR=1.61; 95%CI=(0.13-2.9), p=0.0539), and a scoring of the **distraction facet of the FFMQ scale** (OR=4.65; 95%CI=(0.39-55.7), p=0.0225).

Table 1 - Multiple linear regression to explain the chance of TMD.

Variable	OR	IC95%		p
Pain sensitivity - PPT	3.29*	0.17	62.85	0.0428
Pain Catastrophizing - Total score	1.08	0.64	1.83	0.0776
Difficulty in Expressing Feelings Score	1.61	0.13	2.96	0.0539
FFMQ - Distraction Facet Score	4.65*	0.39	55.74	0.0225



CONCLUSIONS

Painful sensitivity in the face, catastrophizing pain, difficulty in externalizing feelings, and the distraction facet (mindfulness) are variables associated with an increased likelihood of developing painful TMD according to the cognitive-behavioral-emotional model studied in this case-control analysis of monozygotic twins discordant for painful TMD.

RELEVANCE FOR PATIENT CARE

This study of discordant monozygotic twins allows a phenotype analysis, reducing genetic and social influences. The findings underscore that **cognitive-behavioral-emotional variables elevate the risk of developing painful TMD**, besides genetic factors.

FINANCIAL SUPPORT

CAPES FAPESP