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# An educational and exercise program to elderly with knee's osteoarthritis: preliminary results

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**ICEEPSY, RHODES, OCTOBER 2016**

# Introduction

- Educational programs are considered a core intervention, and appropriate for all knee OA individuals.
- As health professionals are mostly educated and trained according to biomedical model.
- A natural consequence is educate / inform their patients about their knee pain also based on this model.
- The latest developments on the OA and the role of the nervous system in pain perception calls into question their appropriateness.

## Introduction

- Traditional educational programs not only have a limited efficacy, but they also can reinforce the patient's beliefs on a patho-anatomical source of pain.
- Thus, several researchers have supported that a more advantageous and logical way to educate patients with OA-related pain might be Pain Neuroscience Educations (PNE).

# Introduction - Pain Neuroscience Education

- Cognitive behavioural intervention
- Explain to the patient the biological processes underlying his or her pain condition
- Based on the premise that recovery can be fostered if patients understand better the origin of their symptoms and illness
- Aims to understand the controversy surrounding their pain, including the lack of objective biomarkers or imaging findings.
- No reference to the biomedical model (pathophysiology, anatomy).

# Introduction - Pain Neuroscience Education

- The focus is to convince patients that pain does not per se result from tissue damage.
  - Pain is a protective mechanism, not necessarily a symptom of damage;
  - How the nervous system interprets information coming from the tissues through peripheral sensitization, central sensitization, synaptic activity and cortical processing;
  - In knee's osteoarthritis , the system can become overprotective;
  - In what manner each patient perceives his/her pain is an important factor for recovery;
  - Exercise is a safe and effective therapy to calm the hypersensitivity of the nervous system.

## Introduction

- It is not known whether providing a physiological rationale, via information about pain neuroscience, it is effective to normalization of pain cognitions, **reduce pain and disability, or increase exercise adherence.**

# Methodology

- 18 Participants (68,9 years; 83,3% woman's) will be eligible for the study if they meet clinical criteria for diagnosis of OA.
- Participants were assessed at the baseline, weekly during intervention and at 3 months follow-ups.
- Outcomes measures included:
  - Tampa Scale of Kinesiophobia, the Pain Self-Efficacy Questionnaire and the Illness perceptions Questionnaire (Control; Comprehension; Concern)
  - Global Improvement of Change Scale.
  - **Numerical Pain Rating Scale**
  - **KOOS-Pain and KOOS-Function**

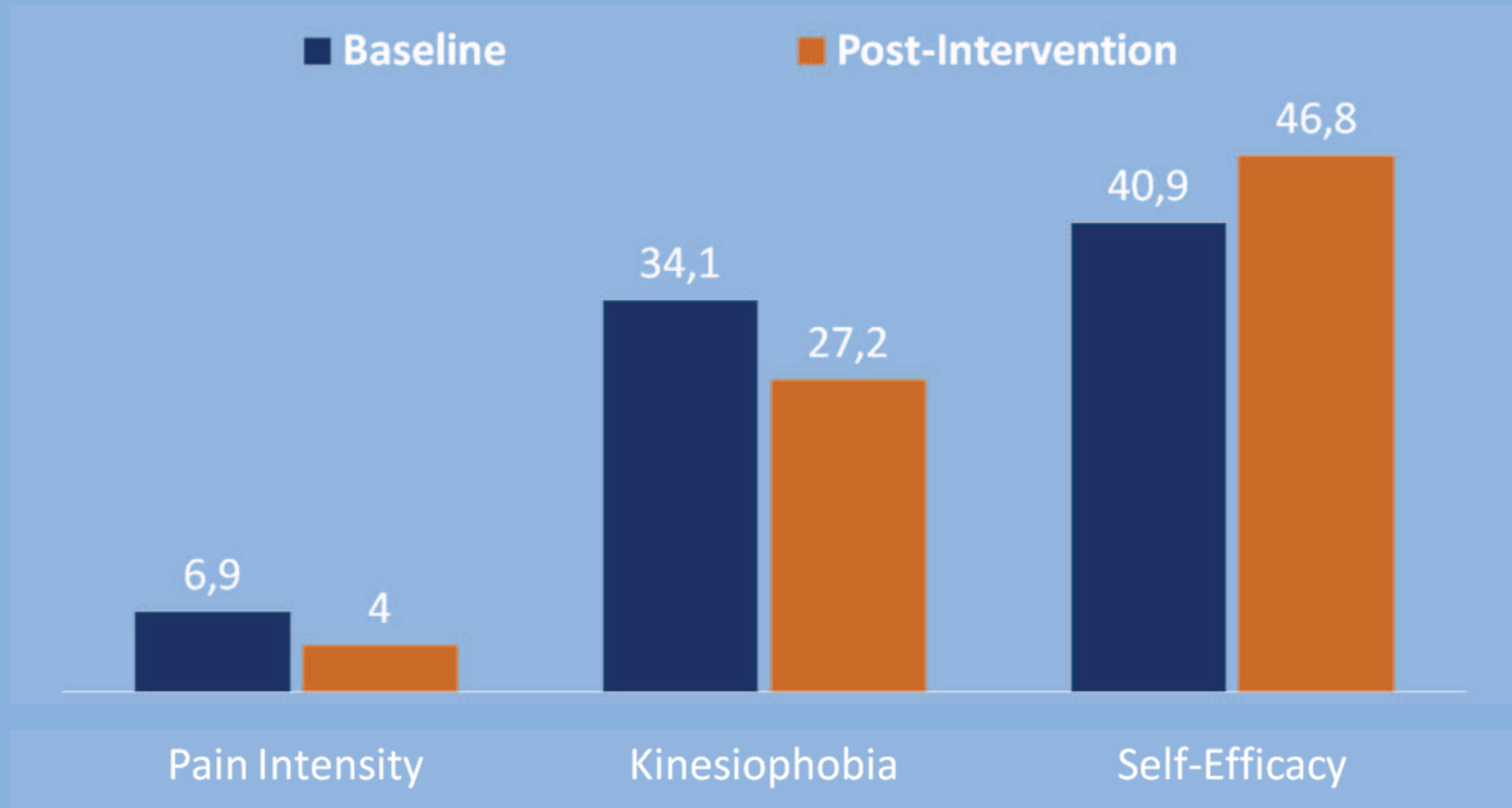
# Methodology - PNE Programme

- 8-week program consisting of 4 group sessions of PNE and 15 sessions of exercise
- Changes in the traditional PNE format included:
  - Dilution and reorganization of the contents over 4 sessions;
  - Focus on the discussion, interpretation and applicability in daily life of the presented contents;
  - Use of metaphors and presentation of real cases to help reframe unhelpful beliefs and introduce new concepts.

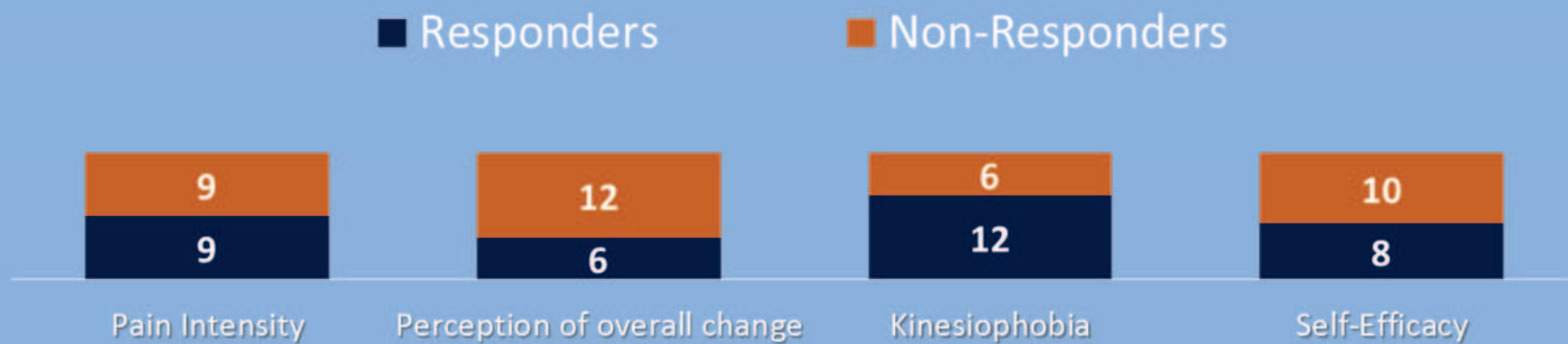




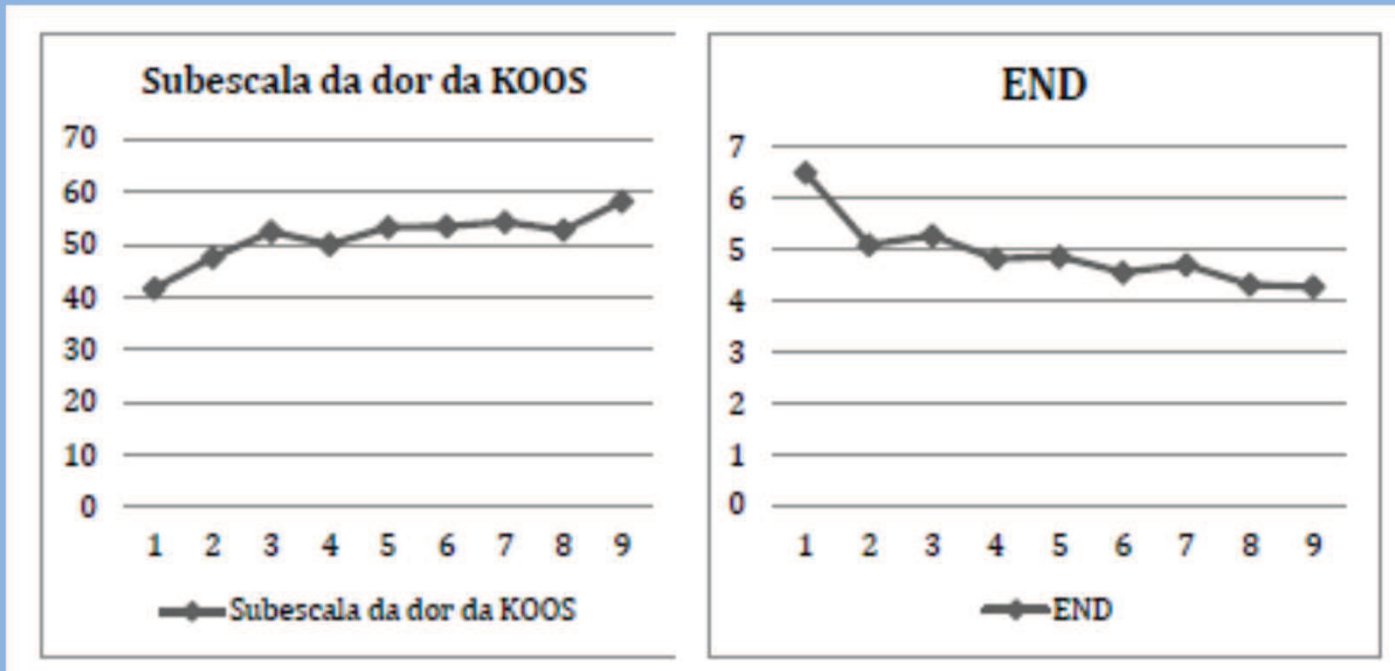
# Results



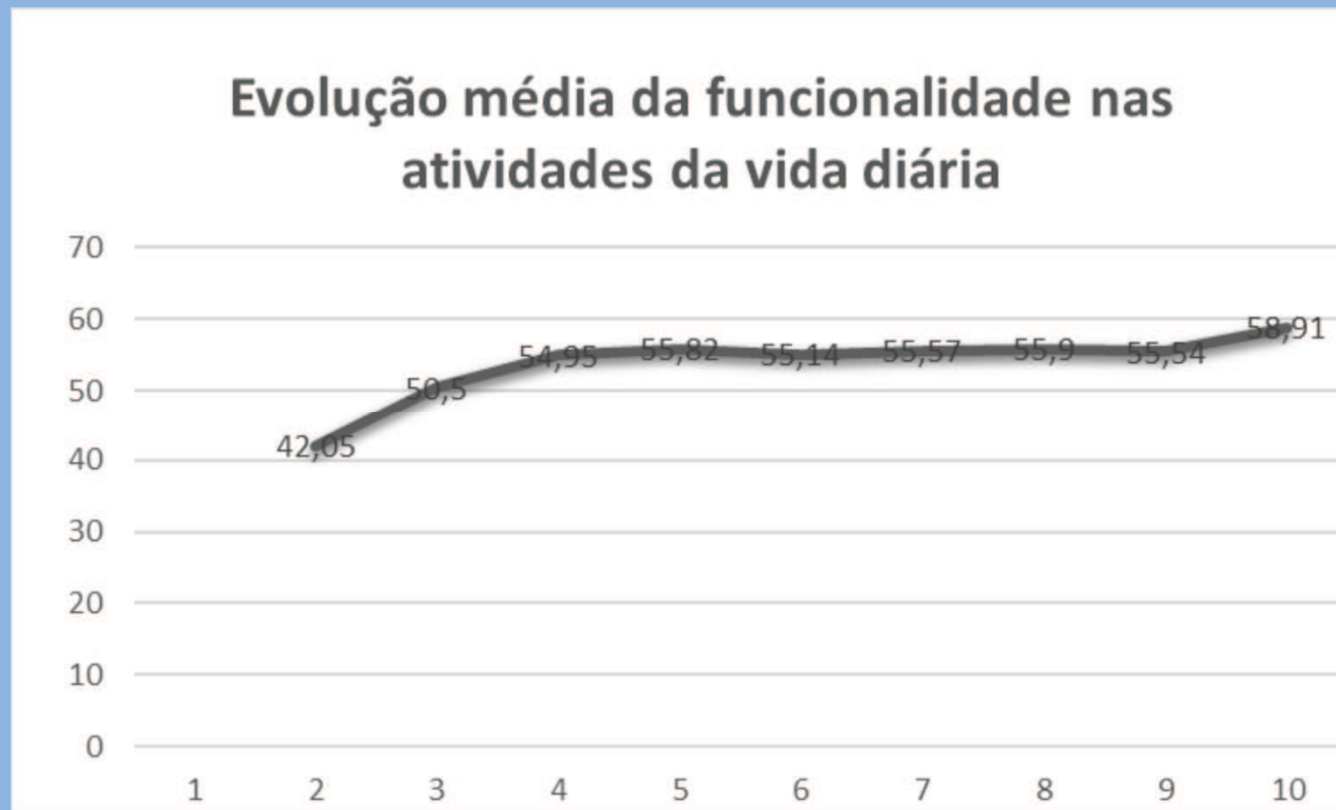
# Results



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# Results

- Statistically differences were verified after the program for:
  - PSEQ ( $p=0,0099$ ),
  - TSK ( $p=0,002$ ),
  - *control over the disease* ( $p=0,037$ ),
  - *and concern with the disease* ( $p=0,004$ ).
- In PSEQ nine participants that presented low pain's self-efficacy change their profile to a high self-efficacy
- in TSK four that presented a moderated and high level of fear of movement change their profile to a low fear.

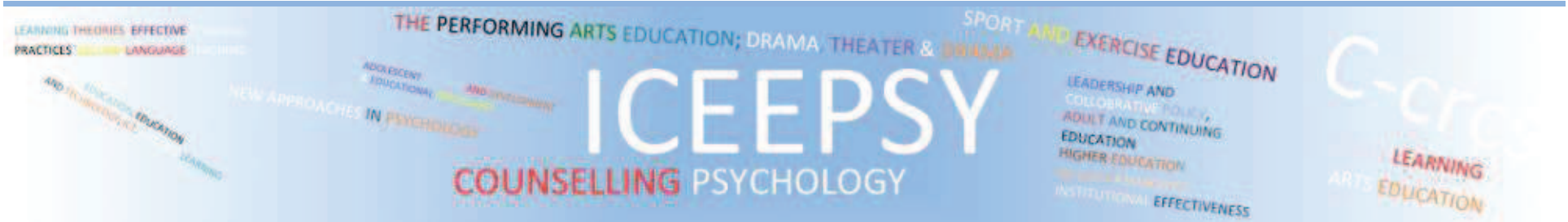
# Implications for policy/Practice

- Preliminary results of a case series suggest that....
  - An educational program based on the neurophysiology of pain and exercise reveals improvement in pain's self-efficacy, fear of movement and beliefs about the disease, as the control over the disease, the concern with the disease and the comprehension of the disease.
  - These findings encourage the need of a randomized control trial to confirm the results.
- Preliminary results suggest significant results in functional dimensions related to the educational component.

# Conclusion

- Problem statement - 50
- Cognitive and behavioral factors can cause worsening of symptoms in people with osteoarthritis. Anxiety, depression, pain catastrophizing and fear of movement can influence the way how individuals see their problem and how to act before him, affecting its functionality.
- Research question 30/2
- Can a program that includes exercise and pain neurophysiology education change the perception of people with osteoarthritis about their condition and improve their functionality?
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- Purpose – 50
- Evaluate the effect of an educational and exercises program in pain's self-efficacy, fear of movement and beliefs about the disease in individuals with knee's osteoarthritis.
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- Research methods – 60
- A exploratory, descriptive and longitudinal study with a sample 22 subjects with symptomatology of knee's. The program with an educational and exercises component implemented twice a week, for 8 weeks. The scales *Tampa Scale Kinesiophobia (TSK)*, *Pain Self Efficacy Questionnaire (PSEQ)* and 3 questions from the *Brief Illness Perception Questionnaire (BIPQ)* were evaluated in the 1<sup>st</sup> and 16<sup>th</sup> session.
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- Findings – 60
- Statistically differences were verified after the program for **PSEQ** ( $p=0,0099$ ) **TSK** ( $p=0,002$ ), **control over the disease** ( $p=0,037$ ), and **concern with the disease** ( $p=0,004$ ). In PSEQ nine participants that presented low pain's self-efficacy change their profile to a high self-efficacy and in TSK four that presented a moderated and high level of fear of movement change their profile to a low fear.
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- Conclusions – 60
- An educational program based on the neurophysiology of pain and exercise reveals improvement in pain's self-efficacy, fear of movement and beliefs about the disease, as the control over the disease, the concern with the disease and the comprehension of the disease.
- Preliminary data indicate significant results in functional dimensions related to the educational component, which at the follow-up.
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- Keywords - 6

• Education; Exercise; Osteoarthritis; <sup>ICEEPSY</sup> Cognitive behavioural intervention;



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