

Patient Preferences in the Treatment of Chronic Musculoskeletal Pain: A Systematic Review of Discrete Choice Experiments



Mengting Zhu,¹ Dong Dong,¹ Hermione Hin-man Lo,¹ Samuel Yeung-shan Wong,¹ Phoenix Kit-han Mo,¹ Regina Wing-shan Sit*¹

¹ The Jockey Club School of Public Health and Primary Care, Faculty of Medicine, The Chinese University of Hong Kong, Sha Tin, New Territories, Hong Kong

Introduction

Chronic musculoskeletal pain:

- is a global health problem with varying impacts on physical, psychological, and social functioning.
- is a preference-sensitive condition; numerous treatment options are available, each with its tradeoffs in benefits and risks.

Patient preferences:

- thus play a critical role in decision-making.
- refer to “relative desirability or acceptability to patients of specified alternatives or choices among outcomes or other attributes that differ among alternative health interventions.”

Discrete choice experiments (DCEs):

- are most commonly used to elicit patient stated preferences and are increasingly advocated.
- can provide a shared decision-making basis for healthcare providers and policymakers

Aim: To summarize evidence that used DCE to quantify patient preferences for chronic musculoskeletal pain treatment and identify important treatment attributes.

Methods and Materials

Study design: a systematic review.

Search strategy: (discrete choice OR stated choice OR conjoint analysis) AND (pain), excluded patients with cancer.

Databases: Ten databases were searched from the date of inception to 19th January 2022.

Study eligibility: Studies were included in this review if they utilized DCE to elicit preferences for treatment in patients with chronic musculoskeletal pain.

Risk of bias: A methodological assessment tool with 23 questions to assess potential biases in preferences’ studies across 7 domains.

Data analysis:

- Attributes of treatment were summarized and sorted according to the frequency of being cited.
- The relative importance of attributes was reported based on the ranking provided by the included studies, or by calculating the scores of the normalized sum of partial utility ranges
- Subgroup analyses were conducted if the type of intervention had been specified.

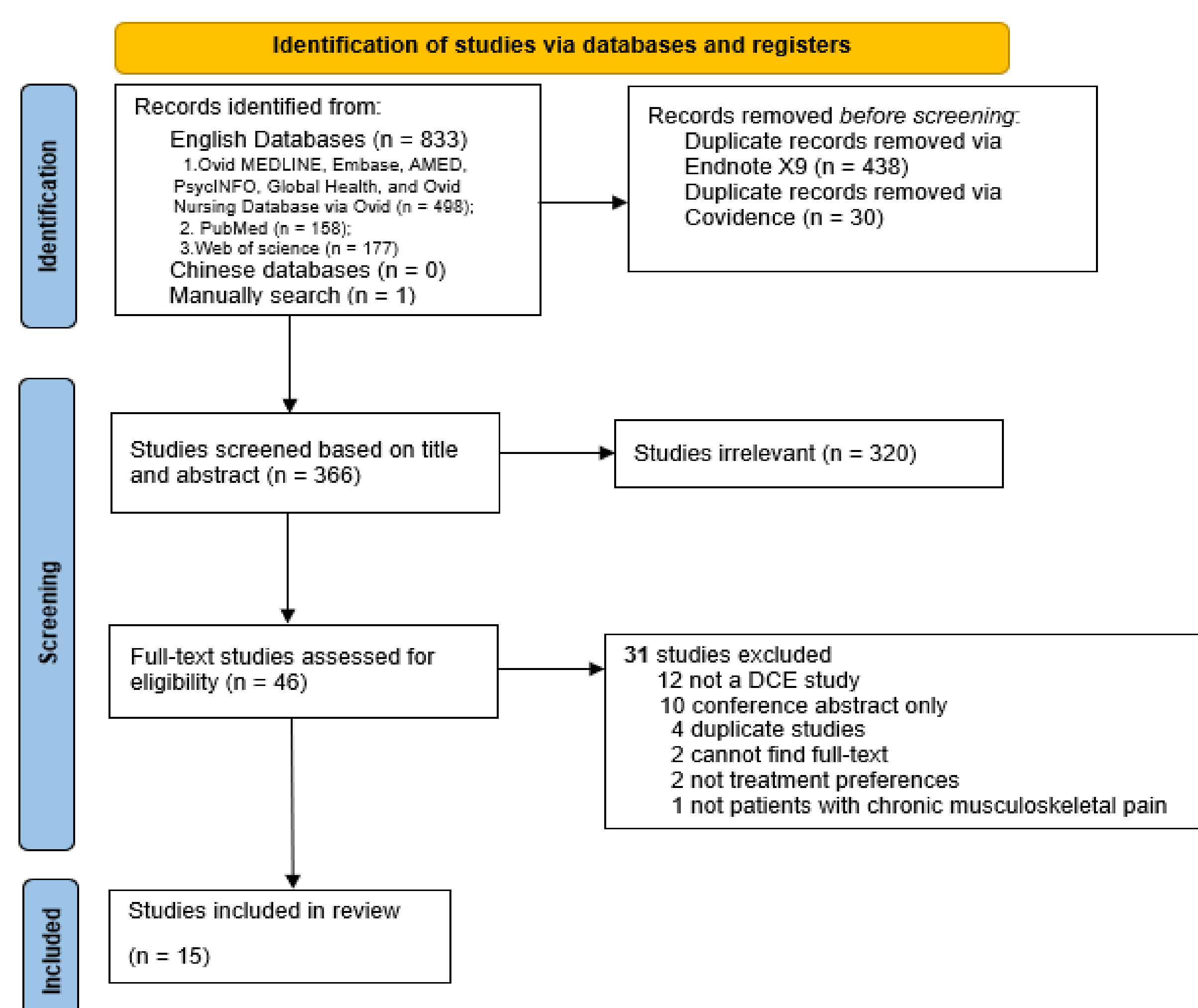


Figure 1. Flowchart of studies selected according to PRISMA (preferred reporting items for systematic reviews and meta-analyses).

Results

Search results: A total of 15 studies with 4065 participants were selected to be included in the systematic review. (Figure 1)

Study characteristics: The studies were published between 2004 and 2021, across multiple countries and had sample size ranging from 58 to 647.

Risk of bias assessment: Overall, 10 studies were rated as low risk of bias, 4 had some concerns, and 1 was rated as high risk of bias.

Attributes associated with patient preferences:

- two most frequently cited attributes: “capacity to realize daily life activities” and “risk of adverse events”. (cited in 8 studies)
- followed by the attributes of “effectiveness on pain reduction” (cited in 7 studies) and “out of pocket cost” (cited in 7 studies).
- less frequently cited but important attributes: “treatment frequency” (cited in 5 studies) and “onset of treatment efficacy” (cited in 3 studies).

Ranking of attributes: The frequencies of attribute importance ranked by attribute type were presented in Figure 2.

Subgroup analyses:

- **Important attributes for drug therapy:** “risk of adverse events”, “capacity to realize daily activities”, “effectiveness on pain reduction”, “out of pocket cost”, “treatment frequency”.
- **Important attributes for exercise therapy:** “out of pocket costs” and “treatment mode and location”

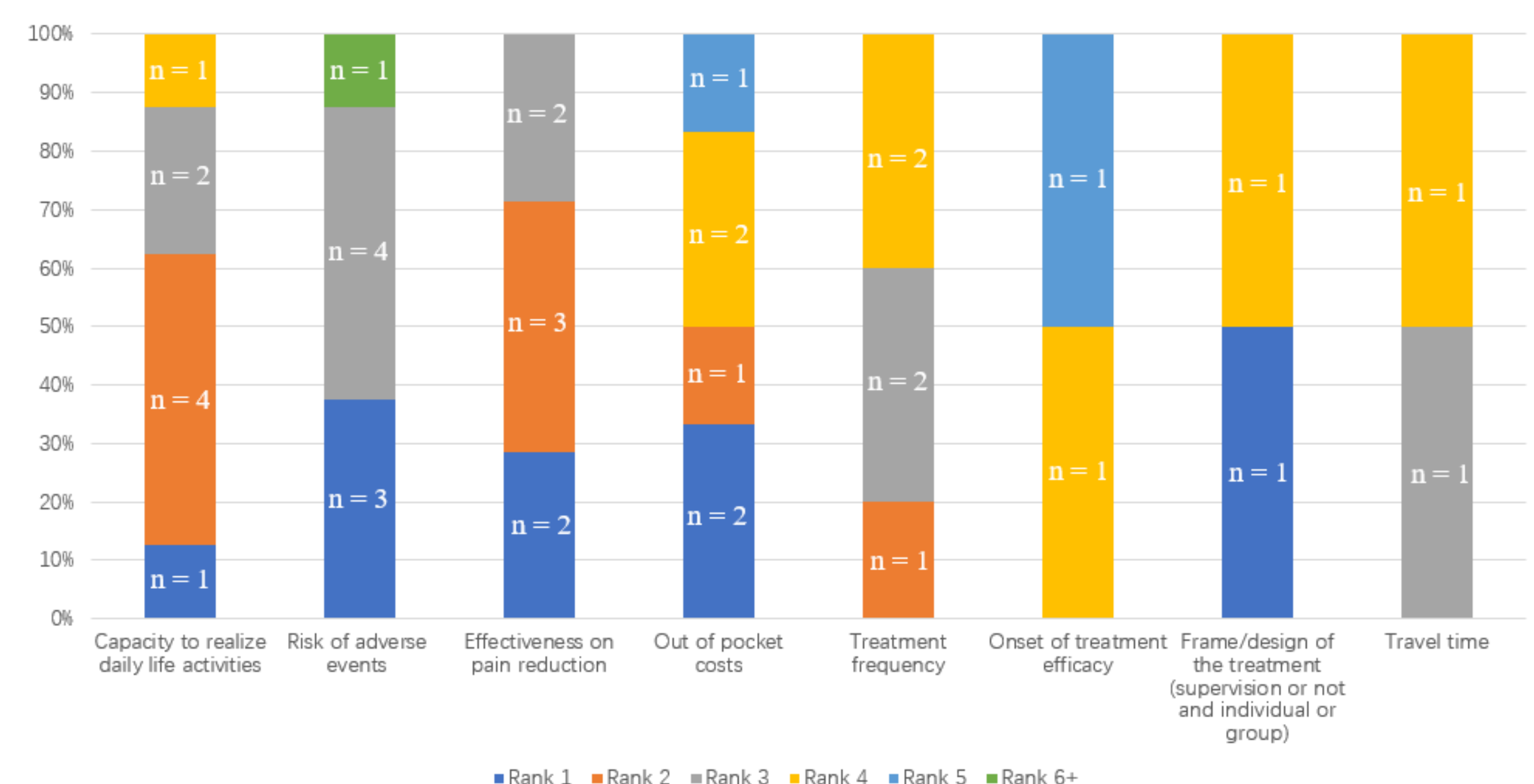


Figure 2. Frequencies of attribute importance ranks by attribute types.

Discussion

Implications:

- contribute to understanding preferences of chronic musculoskeletal pain treatments, which could enhance participation, adherence and satisfaction.
- attributes identified in this review will inform the design of future DCE studies, facilitate the translation of measurement-based care to value-based care and provide the rationale to promote shared decision making and patient-centered care.

Strength: 1) a comprehensive literature search. 2) standard and rigorous methodology to identify key preferences in treatment attributes.

Main limitation: not all studies used the same attributes and levels, thus comparison and ranking of attributes were difficult.

Conclusions

In summary, we found that “capacity to realize daily life activities”, “risk of adverse events”, “effectiveness in pain reduction” and “out of pocket cost” are important attributes in patients’ preferences for the treatment of chronic musculoskeletal pain. Other attributes such as “treatment frequency” and “onset of treatment efficacy” should also be considered in the patient-centered decision. We also found that “risk of adverse events” is an especially important attribute of drug treatment and “out of pocket cost” and “treatment location and mode” were important attributes for exercise therapy. Attributes identified in this review will inform the design of future DCE studies, and facilitate the translation of measurement-based care to value-based care.