Reviewer’s report

Title: Memory of pain in adults. A protocol for systematic review and meta-analysis

Version: 0 Date: 04 Feb 2019

Reviewer: Marta Walentynowicz

Reviewer's report:

Thank you for the possibility to read and comment on this protocol. The aim of this systematic review and meta-analysis is to determine how accurately adults remember experienced pain. Given the mixed findings from previous studies exploring memories for both experimentally induced and naturally occurring pain, this systematic review and meta-analysis will be an important and much-needed contribution to the field. The authors plan to include a variety of pain experiences in their review: experimentally induced pain, chronic pain, and acute pain. However, the inclusion of chronic pain which is typically measured with diary studies might pose a problem (see below). The comments listed below are intended to further strengthen this paper.

Introduction

The authors put forward that the type of pain is an important factor affecting pain memories and refer to the study comparing labor pain with pain caused by surgery. I do not fully understand how "type of pain" is operationalized. Acute vs. chronic? Experimentally induced vs. naturally occurring? Non-pathological causes vs. pathological causes? As one of the research questions of this study is about the effect of type of pain on pain memories, it is important that the authors elaborate on this topic a bit more.

Other factors that were shown to lead to memory biases are pain at the moment of recall and affective responses to pain (e.g., experienced and remembered anxiety). I understand that not all factors can be included in the analyses, but I wonder what led to the choice of the two proposed factors above the other ones.

Search terms

Consider adding "retrospective*"
Selection of relevant studies

Many studies that fulfill the proposed search criteria are diary studies. I would advise against including such studies in this review paper for a number of reasons. First, diary studies in the past (before the era of smartphones) were often collected using paper-pencil diaries. This method of collecting data does not allow for a precise measurement of compliance and research suggests that the actual compliance in paper-pencil diaries was very low. This means that many of the momentary ratings were, in fact, retrospective. Second, diary studies use different protocols including intensive momentary assessments at random moments (e.g., 10 prompts per day), momentary assessments at fixed moments (e.g., morning, afternoon, evening), end-of-day, and end-of-week measures. In consequence, precise decisions should be made regarding what is understood as the gold standard for comparison with recall ratings, given that every measure that is not asking about pain at the moment can be seen as retrospective and relying on memory processes (e.g., How much pain have you experienced today). Finally, in the case of the diary studies, the recall does not only involve the act of retrieving the experience from memory, but also summarizing it over an extended period of time. In that case, recall bias might be not due to memory failure, but possibly due to individual differences in the way people summarize their experiences. All things considered, I would advise against including diary studies in this review. Instead, focus on the memory for pain episodes/events (experimentally induced and naturally occurring) would lead to a much more concise and stronger paper.

Data collection

Lines 171-173. Why were those specific studies selected for power calculation? Both studies focused on naturally occurring pain and many studies that explored pain memories used experimentally induced pain. Would it be more informative to also include experimental studies in the power calculation?

Data extraction

Line 183. I would not use the word "umpire".

Data synthesis

Could the authors describe how they will statistically address the research questions concerning the type of pain and recall duration as biasing factors?
I hope these comments are helpful in revising this paper. I am happy to provide further comments at a later stage.

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