Reviewer's report

Title: Avoidable costs of physical treatments for chronic back, neck and shoulder pain within the Spanish National Health Service: A cross-sectional study

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Reviewer: Chung-Wei Christine Lin

Reviewer's report:

This study contains a literature search to identify systematic reviews and clinical guidelines on treatments for low back, neck and shoulder pain, and a cost of illness study in which costs attributed to the treatments for low back, neck and shoulder pain were collected from a health service database. The authors described the costs attributed to treatments that were either effective, ineffective or had uncertain effectiveness.

The study was well-written and highlighted costs which may have unnecessarily incurred, but needs to be clearer on the identification and valuation of costs and does not present the latest evidence on effectiveness. My comments are below.

MAJOR COMPULSORY REVISIONS

1. Clarification of types of health services/costs collected –On page 5 under methods it is stated: “It [the database] includes data on the patients who are referred to private practices, including referrals for physical treatment”, and later (page 10) “it does not factor in data on the costs deriving from physical treatments administered in hospitals and primary care practices”. The distinction between private practice and primary care practice is not clear. Hence it would be useful to list the type of health services included in the database.

2. A main criticism I have is that the literature search for guidelines and systematic reviews is from 2003 to 2007, and therefore dated. It is possible that the authors have done this to coincide with the period of cost data collection. However this means that the evidence is not current and hence the results on avoidable cost do not reflect the latest evidence. For example in Table 1 the authors have stated that there is no data on massage for back pain. But a Cochrane systematic review was published in 2010 (Furlan et al), whose results would change the results of the current manuscript. I would suggest that the search needs to be updated to reflect the latest evidence.

3. Methods for valuation of cost are not clear. Page 7 – the health service pays private clinics a fixed fee per condition, irrespective of the types and numbers of treatment. However the description on how the costs were broken down to cost individual treatments is not clear.

4. An essential issue in this area is that most of the evidence on conservative treatments for neck, low back and shoulder pain shows no evidence when one
treatment is compared to another. Yet most treatments show some evidence of effectiveness when compared to no treatment. This manuscript suggests that currently the healthcare system spends 60% of its budget on treatments of no effectiveness. But it would be useful in the discussion to take into account the nature of evidence and possible alternatives to current treatments being funded to allow health dollars to be utilised wisely.

MINOR ESSENTIAL REVISIONS

The study is conducted in a specific region in Spain and may have limited generalisability, as discussed by the authors. Although the authors discussed the generalisability as applied to the rest of Spain, it would be useful for the international readership of this journal to have some discussion on how the study results would apply to another country/different healthcare setting.

DISCRETIONARY REVISIONS

Nil

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests.'