Author's response to reviews

Title: How much do rheumatologists and orthopaedists doctor's modalities impact the cost of arthritis in Cyprus?

Authors:

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Author's response to reviews: see over
Dear Editors,

Please find bellow the respective responses, in blue, to the reviewer’s reports with regards the manuscript “How much do rheumatologists and orthopaedists doctors’ modalities impact the cost of arthritis in Cyprus?

We look forward to hearing from you

Yours sincerely

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Reviewer's report

Title: How much do rheumatologist and orthopedist doctors’ modalities impact the cost of arthritis in Cyprus?

Version: 5 Date: 13 March 2015
Reviewer: Raymond Oppong

Reviewer’s report:
Major compulsory revisions

This paper covers an important topic. It assesses the direct cost of arthritis in the Nicosia province in Cyprus.

1. A major issue is that the data analysis has not been described in sufficient detail.
   a. The authors simply state that “an excel spreadsheet was used to establish the statistical analysis of the data.” How was this done? More information on the way in which the data were analysed is needed. E.g. what methods were used? How did the authors come up with an annual cost? It is essential that the reader is provided with this information.

We added at the end of the section Methods:
An Excel table was used for each doctor to establish the descriptive statistical analysis of the data and calculate the frequencies of the variables. We collected for every doctor their weekly, monthly and annual modalities per patient (pharmaceuticals, supplies and laboratory tests) and added the number of visits, for each one of the different stages of the disease. We then calculated the average charge per patient for these visits and modalities (pharmaceuticals, supplies and laboratory tests) and adjusted it per patient per year.

b. Was the main aim to establish a yearly cost, monthly cost etc.? This should be spelt out in the methods section. We added line 132
Our aim was to estimate the direct annual cost per patient in the different stages of the diseases.

2. What was the rational for limiting the study to private orthopaedists or rheumatologists? In line 86 we added:
   a. We considered annual cost in the private sector more representative, as it represents the market prices. It is totally paid by the patient as out-of-pocket money.

3. The introductory section could benefit from a bit more information on how the healthcare system in Cyprus is organised and why there was the need to limit the analysis to the private sector. We added at the end of the introduction the following paragraph:
   a. Cyprus with a population of about 800.000 lies in the outermost borders of the European Union. In the country two parallel health systems operate, a public and a private one. The public system covers 85% of the population while the rest has to pay out of pocket money in order to get health services. The out-of-pocket payments account for about 40% and it is one of the highest proportions of household spending in Europe. The system is fragmented and the coordination and communication within and between public and private sectors is poor. It is very common even patients who are entitled for free medical care in the public sector to seek these services in the private, mainly due to long waiting lists in the former.

4. In the abstract, the authors state that "A questionnaire based on Greek and international research was completed..." but there is very little information on how this questionnaire was developed. Is the questionnaire described in detail elsewhere? If so, please provide a reference or a detailed description as an appendix. The English version of the questionnaire was added as appendix.

Minor essential revisions

Abstract Line 21: "(10/1/1012)" please correct the date. done

Abstract Line 22: The statement "with a sample of specialists in orthopaedics and rheumatology (50%) is not really clear. What does (50%) represents? Please rephrase this sentence. We rephrased as: a sample of 20 doctors specialists in orthopaedics and rheumatology (50% of practising physicians in the private sector).

Introduction Line 82: "The research on the cost of osteoarthritis is very limited in our country." Authors should make it clear what country they are referring to. done

Results Line 153: “The last question addressed new incoming cases of osteoarthritis that the participating physicians treated.........” Once again, it would have been helpful for the reader to have an idea of how the questionnaire looks like/how questions were asked in order to make a judgment. The questionnaire was added as appendix as above

With respect to the results, it is not really clear how some figures should be interpreted. E.g. line 170-171 “The cost for such tests is estimated at 120€. The total cost, including the physician’s office visit was estimated at 150€” is this a cost per patient? Is this an annual cost? Monthly cost?
The total diagnosis cost per patient, including the physician's office visit was estimated at 150€. We added "per patient" accordingly.

Line 182: "During stage 1 the average number of visits to the private practitioner's office was estimated at 1.4." over what time period? week, month, year? There are several instances where it is difficult for the reader to determine the time period being considered. Added 1.4 per year

Discretionary revisions

Tables: Is it possible to present standard deviations as well?

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

2nd Reviewer's report

Title: How much do rheumatologists and orthopaedists doctors' modalities impact the cost of arthritis in Cyprus?

Version: 5 Date: 23 March 2015
Reviewer: Gregory Lubiani

Reviewer's report:
- Major Compulsory Revisions

1. The authors make note in the paper and summarized conclusions that the existing state of practice lacks cost-effectiveness. These statements are outside of the scope of this paper. At no point do the authors evaluate indirect costs involved or, more importantly, the effectiveness of the various interventions mentioned in the paper.
   - the reviewer is right we deleted the note in line 33 and lines 311-315 respectively

2. There needs to be more explanation regarding how the data was reported. It is unclear whether the doctor's utilized the patient data at their disposal or used their experience to provide a "best guess". It would also be beneficial to provide the survey as an appendix.
   - i. Patient information was reported in a technical formal descriptive systematic way. Some doctors utilized the relevant data at their disposal while others used their experience to report information.
   - ii The survey is provided as an appendix
3. The authors state the use of fees reported by various provider agencies. Do these represent unadjusted fee schedules or the average adjusted charge per patient? This needs to be clarified and, if it is unadjusted, needs further addressing. We added at the end of the section Methods: An Excel table was used for each doctor to establish the descriptive statistical analysis of the data and calculate the frequencies of the variables. We collected for every doctor their weekly, monthly and annual modalities per patient (pharmaceuticals, supplies and laboratory tests) and added the number of visits, for each one of the different stages of the disease. We then calculated the average charge per patient for these visits and modalities (pharmaceuticals, supplies and laboratory tests) and adjusted it per patient per year.

In the conclusions, the authors state that the economic downturn didn’t affect consumer habits in this sector. There needs to be some citation or discussion here to defend that statement.

We rephrase it as follows

- It would be interesting to see how the economic crisis influenced the patient’s behavior.

- Minor Essential Revisions

4. The portion discussing costs seen by other countries is a bit jumbled. It needs to be cleaned up. Also, it would be beneficial to elaborate on what the reader should take away from these comparisons.

   - i. cleared
   - ii. we added line 345-347. These variations may be due to different methods of cost calculations and highlight the importance of the harmonization of relevant cost measurement methods

5. There are minor grammatical errors throughout. The paper would benefit from further editing.

   - Further editing was done

6. A discussion on the limitations of the paper should be included.

   We added a paragraph at the end of the conclusions. Lines 387-397

**Limitation of the study**

This study is only limited to the direct annual cost per patient. For a comprehensive analysis of the burden of OA indirect cost should be included as well. Furthermore, for an overview of the financial burden of disease it would be interesting to see the lifetime average cost of the disease.

The study refers to the private sector orthopaedic and rheumatologist physicians’ modalities in the region of Nicosia. Even though the sample was small (50% of practicing physicians), one may expect to a certain extent similar results in the rest of the four regions as well as in those countries where the relation doctor/patient is characterised by the same values and beliefs as pointed out above. Furthermore, due to the fact that we did not use patients’ personal data, we did not match patients and doctors. Cultural reasons may lead the same patients visit more doctors for diagnosis and treatment and thus bias the number of patients with OA in the country.

**Level of interest:** An article of limited interest

**Quality of written English:** Needs some language corrections before being published
Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interest  I declare that I have no competing interests