Author's response to reviews

Title: Let me Google that for you: a time series analysis of seasonality in internet search trends for terms related to foot and ankle pain

Authors:

Scott Telfer (scott.telfer@gcu.ac.uk)
James Woodburn (jim.woodburn@gcu.ac.uk)

Version: 2
Date: 5 March 2015

Author's response to reviews: see over
Response to Reviewers
We thank the reviewers for their feedback on our paper. Their considered comments have led to, we believe, a clearer and stronger manuscript.

Reviewer: Richard Collier
*Overall, this is an interesting study utilising a novel methodology to investigate trends based on internet search data. The validity of the data is rightly challenged and may act as a proxy for true incidence/prevalence data. As such, this study does not require major revisions but rather it should be judged as an indicator of what’s possible with the tools now available for interpreting population trends from internet use.*
We agree entirely and have emphasised that our aim in this paper is to demonstrate the potential of this novel source of data.

*The rationale for analysing the search terms used could have been made more robustly and the article written in such a way that conclusions were more obvious to a non-computer literate reader who might not understand the significance of the underscore in terms such as...FOOT_PAIN (although the underscore is missing in the discussion (PLANTAR FASCIITIS)).*
We agree and the underscores in the search term groups have all been removed in the revised manuscript. We have also expanded the rationale as to why the search terms were chosen (page 5 lines 18-19; page 6 lines 2-5)

*There is a word missing from the second sentence in the Results section, ‘Ankle Treatment’ paragraph which should probably read ...There was insufficient data...rather than ..There insufficient...*
This has now been corrected (page 9 line 11)

Reviewer: Ivan Bristow
*Major Compulsory Revisions*
1. *In the introduction the author’s state they hypothesised that there maybe seasonal variations. On what basis was this made?*
This hypothesis was based primarily on our clinical experience and subsequent investigations of the literature on activity patterns and seasonal pain. We have added this information to the introduction section (Page 4 lines 9-12)

2. *Following on from the above, can the authors declare that this data was collected and reviewed prospectively, after the formulation of the hypotheses?*
We have now stated that the hypotheses were defined *a priori* (page 5 line 9).

3. *In applying search terms, can the authors clarify how mis-spelt search terms by users would have appeared / been handled by the Google tool?*
We have clarified that Google Trends does account for common misspellings and includes them in the search statistics, and that we did not attempt to capture rarer misspellings (page 11 lines 12-13)

4. *Can the authors expand / clarify the limitations of the Google Trends tool in...*
health research? For example, the bias in terms of google search users only, only internet users would access this information. Also, if any changes or upgrades to the Google tool itself have been made over the years which may have affected how the data set was collected over the period of time?

The limitations paragraph has been significantly expanded to address the reviewer’s comment here. We have added additional details on the limitations and the tool itself (page 11 lines 15-21).