Reviewer's report

Title: Smoking and Health-Related Quality of Life in English General Population: Implications for Economic Evaluations

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Reviewer: Lesley Owen

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This paper addresses an important gap in the published literature on the association between smoking status and health related quality of life (HRQoL) in the English population where the latter is measured using a standardised instrument suitable for use in economic evaluations, in this case the EQ-5D.

It is of particular interest and value because the analysis of HRQoL takes into account a range of factors that might be expected to influence the outcomes such as lifestyle and socioeconomic status. As far as this reviewer is aware, this is the first study to do so in the context of smoking behaviour.

Subject to a few very minor revisions I have no hesitation in recommending it for publication. As the authors note, tobacco use imposes a considerable burden on the health sector and society more widely. Publishing this paper would be extremely timely in the current economic climate where there is an increasing demand to demonstrate value for money and efficiency in the health and other public sectors.

The question posed by the authors is well defined and the methods deployed appropriate. The survey has a reasonable sample size (n=13,241) given the analysis which considered 6 different ‘smoking’ groups and controlled for a range of other factors. The authors assessed 3 different models for analysing the EQ-5D tariff data and provide what appears to be a sound rationale for final approach adopted. A case is also made for the approach adopted in the analysis of the EQ-5D dimensions data. The authors note the number of individuals who had missing data and the % of missing values for some of factors and describe how these ‘data’ were handled. The results are clearly described and the discussion and conclusions are supported by the data presented.

Minor essential revisions

Abstract – In the conclusion the authors refer to the ‘frequency of smoking’ but it would be more accurate to refer to ‘the number of cigarettes smoked’ as this is what was measured.

Discussion - In the 6th paragraph the last sentence a bit misleading. The value of the QALYs gained is £20-30million but this is not what is saved as the cost of generating the gains is not taken into account. The statement would benefit from some reworking.
The title of Table 3 should make it clear that the ‘utility’ values are ‘adjusted utility’ values.

Discretionary revisions

Background – In the 1st paragraph the points about the costs of smoking would be stronger (ie. more illuminating) if they were illustrated using data for the same country and the same year of estimation. It is difficult to get the sense of scale between costs to the health sector and costs to wider society when the first is reported for NHS in 2005/6 and the latter is reported for Germany in 2003.

Modelling EQ-5D tariff data – In the 4th paragraph the authors describe the variable they used as a measure of social capital. Was there an a-priori reason for using this particular measure? It would be helpful if they could include a rationale as to why it, as opposed to any other measure of social capital, was used.

Results – 2nd paragraph. Although the analysis does not include the category ‘current smokers’ it would be helpful if the authors reported the % of smokers who are current smokers in the summary statistics.

Discussion – In the penultimate sentence of the 5th paragraph the authors should consider changing “Likewise, making heavy smokers quit…” to “Likewise, supporting heavy smokers to quit…. “

Discussion – In the last paragraph the authors briefly discuss the finding that being a heavy smoker is associated with an 86% increased likelihood of reporting some/severe problems in anxiety/depression. There is a body of literature on the association of these symptoms with nicotine and with nicotine withdrawal. The authors could usefully refer to this literature – see for example the following paper: Chronologically overlapping occurrences of nicotine-induced anxiety- and depression-related behavioural symptoms: effects of anxiolytic and cannabinoid drugs, Tamaki Hayase, BMC Neuroscience 2007, 8:76 doi:10.1186/1471-2202-8-76 (http://www.biomedcentral.com/1471-2202/8/76)

The authors could usefully refer to the economic models commissioned by NICE for its public health guidance on prevention and cessation strategies for tobacco control.

The paper should be checked by the authors for grammatical errors, for instance the articles ‘the’ and ‘a’ are sometimes missing or used when unnecessary and the wording of some of the sentences could be improved.