Reviewer's report

Title: Genetic Discrimination and Life Insurance: A Systematic Review of the Evidence

Version: 3 Date: 28 August 2012

Reviewer: Peter Lee

Reviewer's report:

“Genetic Discrimination and Life Insurance: A Systematic Review of the Evidence”
by Yann Joly, Ida Ngueng-Feze and Jacques Simard

Comments on whether the systematic review has been carried out appropriately

Author : P N Lee
Date : 28 August 2012

This systematic review, though interesting, and in an area where it is clearly difficult to obtain quantifiable and easily interpretable results, could be improved in a number of ways. All of the points below can be regarded as major compulsory revisions.

1. In the “Methods” section, it would be preferable to start by defining the criteria for selecting the appropriate reviews. Make clear which publications you are looking for before describing how you go about finding them.

2. The description of the literature search should be expanded, perhaps by cross-referencing to an additional file giving fuller details, and clarified. As written, it is extremely unclear. Ideally, it should be written in a manner that allows other researchers to reproduce it. One should preferably have details, for each search made, as to when it was carried out and of the keywords used. How many references were identified, how many were rejected from examination at abstract and how many were identified as of possible relevance? The text says 29 studies were identified from a PubMed search using only the terms “genetic discrimination” and “life insurance”, and of 29 studies also being identified from searches using further keywords and using sources other than PubMed. Are these the same 29 studies? If not, how many overlapped? If so, it seems remarkable that adding more keywords and sources produced nothing. The flow chart (Figure 1) is also rather unclear. Firstly, it is not clear on looking at it whether the 29 and the 45 are separate or not. Is it $29 + 16 = 45$ or $29 + 45 = 74$? Second, the box with $n = 45$ talks about searches “in recent literature”. There is no mention of this in the Methods.
3. The “Methods” section ends with a paragraph, “Data extraction and quality assessment”, but it is unclear that any quality assessment has actually been carried out. Thus no quality index, based on a combination of scores for different aspects of the study design and conduct, has been derived. Also the section does not define what the principal endpoint is. The Results and Discussion” section notes that 49% of the studies concluded there was strong evidence of genetic discrimination, with 33% finding some evidence and 18% no evidence. I would have thought this could have been the principal endpoint, and apart from giving the distribution of this variable for all studies, one might also give it for studies where specific diseases were a major topic.

4. The “results” and “discussion” sections should be separate, particularly so that one can see what the “results” actually are.

5. A major weakness is that no results are given for individual studies. It is particularly remarkable that the paper does not make clear which particular publications provided strong, some or no evidence of genetic discrimination. Table 1 could perhaps be extended to include these results and also individual study values for some other coded items not already considered. To facilitate this, the first column of Table 1 could be considerably reduced, What is the point of giving all the authors when they are just listed in the references? Why not just give “Bloggs et al[n]” or simply “[n]” where n is the reference number?

More work is needed!

**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