Reviewer's report

Title: Association of self-rated health with multimorbidity, chronic disease and psychosocial factors in a large middle-aged cohort from General Practice: A cross-sectional study

Version: 2 Date: 1 July 2014

Reviewer: Gary McLean

Reviewer's report:

The paper focus on a increasingly important area of health research and is clear in its aims and is well presented. However, I have a number of concerns

Major Compulsory Revisions

1) As the authors themselves state this is an area which has previously been fairly well studied. They aim to add to this research by assessing "whether specific disease combinations may work synergistically in their impact on patients’ health experiences". However, I don't think they really do this in the manuscript. To my mind, this would involve looking at how specific combinations of diseases (i.e diabetes/cardiovascular compare to cancer/cardiovascular only etc) affect self rated health rather then looking at individual conditions and how increases in the number of non-specified conditions impact.

2) For logistic modelling, the authors classify "poor" as those with poor or moderate self health. Given the overwhelming majority of this group are those classing themselves as moderate this presents a somewhat misleading picture. Therefore, I think the authors so either compare by three groups (good, moderate, poor) or relabel the poor group as moderate/poor and give greater emphasis to this in the discussion and conclusions.

3) All the results show differences by gender so the regression modelling in table 5 should do this as well rather than just adjusting for this.

4) Previous studies have show the importance of mental health in multimorbidity and this is likely to have a bit impact on self rates health given its coexistence with pain (Barnett k et al, Lancet. 2012 Jul 7;380(9836):37-43-McLean G et al BJGP July 1, 2014; 64 (624). Therefore, adding depression in some form as a condition in the regression analysis would add to the study in assessing the effect of depression on self rated health with increasing multimorbdity.

5) Deprivation has also how to be a significant factor in MM and given the high rates of pain found in the multimorbid in more deprived areas (McLean G et al 2014) likely to have an effect on self rated health. Some additional analysis on this would add greatly to the paper at the very least should highlight the potential effect of deprivation on self rated health in greater detail in the discussion.

Minor Essential Revisions

1) The authors should report how representative of the population the cohort is.
2) Self rated health is listed as moderate in table 1 but fair in tables 2 and 3 should be one or other
3) Increasing the number of conditions reported would help to give a better idea of increase in poor rated and multimorbidity (0, 1, 2, 3, 4, 5 or more).

**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