Reviewer's report

Title: Association between physical and mental health-related quality of life and adverse outcomes; a retrospective cohort study of 5,272 Scottish adults

Version: 3  Date: 16 August 2014

Reviewer: Chiara de Waure

Reviewer's report:

The paper "Association between physical and mental health-related quality of life and adverse outcomes; a retrospective cohort study of 5,272 Scottish adults" deals with the impact of HQoL on the occurrence of CVD, cancer and death. This topic is quite interesting and up to date but, in my opinion, is deeply biased. In fact, HQoL is related to well-being and, actually, it is highly predictable that the lower the HQoL the higher the risk for chronic diseases and deaths. This is also demonstrated by the results that Authors got. In fact, the occurrence of CVD, cancer and death was shown to be associated to PCS but not to MCS. It is clear that a low PCS is due to physical impairments and that the latter could explain the exceeding risk.

Alongside this major concern that impairs the originality and relevance of the paper, there are further major concerns to be addressed.

Introduction
• the Authors did present the results of a retrospective cohort study on the same topic. Why did they perform the new study? Is not a duplicate?

Methods
• Operational definitions are not all provided (e.g. category of alcohol consumption: what did the Authors mean with "within limits" and "excessive"?).
• Comorbidity is not investigated in deep. The Authors speak about hypertension and diabetes but what about the information collected through saliva and urine samples? According to me it is not right to say that results are adjusted for comorbidity if they took into account only hypertension and diabetes.
• In statistical analysis, Authors described how they tackled interactions. But why did They choose to study only interactions with BMI and gender?

Results
• Looking at PCS and MCS classes, there are overlapping (e.g. as for PCS, score 51 is included in the second and third classes and score 55 is included in the third and fourth classes; similarly, as for MCS, 53 is included in the second and third categories and 56 in the third and fourth ones).
• There are some significant results for MCS which are not elaborated on at all.
Discussion

• Authors stressed that the results of their study are applicable to the general population and that this distinguishes their study from previous ones. Notwithstanding, specific populations may be included in the general population and Authors did not try to make sub-analysis excluding them.

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:

I declare that I have no competing interests