Author's response to reviews

Title: Hospital admissions in relation to body mass index in UK women: a prospective cohort study

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Author's response to reviews: see over
We would like to thank the reviewers for their positive comments and helpful suggestions for improving the manuscript. We have listed our responses to each of the reviewers’ comments below.

Reviewer 1.

1. The central question here is well captured in the title. This is very large well documented cohort in women. The analyses are robust and well considered/adjusted for potential confounding and measurement error. The authors arrive at a well justified conclusion – the main findings are not a surprise and the estimates are believable and plausible.

   We thank the reviewer for his comments.

2. Major essential revisions
   A few key limitations that are not addressed by the authors – but could be without much extra work.

   The time period is from 1997 to 2008. This is a limitation as it does reflect current UK practice (which may even be worse). There have been many changes in UK referral practice etc. since 1997, and this needs to be considered. The authors should explore for a period effect.

   A clear limitation is the inability of the data to distinguish between emergency and elective admission. These are driven by often totally different sets of factors. For example, even in a timescale of 10 to 15 years, improvements in anaesthetics and attitudes to operating on the obese patient has probably impacted upon orthopaedic surgeons’ willingness to operate on obese patients. These trends should be explored.

   We have conducted additional analyses of BMI in relation to total hospital admissions by calendar period of admission (1996-2002, 2003-2008) and found no discernable difference in the results (the estimated trends in rate ratio per 5 unit increase in BMI for both time periods were identical to 2 decimal places). This is now mentioned in the results section on p7.

   The reviewer raises an important issue regarding possible differences in the impact of BMI on the rates of admission with elective versus emergency admissions. However, although it may be possible to carry out some very preliminary analyses with respect to type of admission, we do not feel that it is feasible to address this issue properly within the current paper and a crude analysis may actually raise more questions than it answers. For example, if we found that BMI was associated with a greater increase in the overall risk of emergency admissions than in elective admissions this could reflect a reluctance on the part of surgeons to carry out non-essential surgery on obese individuals (as the reviewer suggests) or it could be due to a greater association of BMI with conditions that tend to present as emergency admissions. Any meaningful analysis of these issues would, therefore, require much more detailed analyses than is feasible here, including analyses within categories of admissions for specific conditions. We have now added a sentence to the discussion on p11 highlighting this as an area requiring further research.
3. The standard nomenclature used by Diabetes UK is type 2 diabetes rather than type II diabetes (and similarly for type 1 diabetes). Please correct throughout.

This has now been corrected throughout the paper.

Reviewer 2.

Interesting and important paper with a clear research question, rigorous and appropriate research design, large sample size, clear and appropriate analyses and presentation of findings and important findings of relevance primarily to public health and health services practice and policy. The authors should clarify the extent to which the study participants are representative of middle-aged women in the UK.

A sentence has now been added on p3 describing the characteristics of the study population in relation to the general population.