Reviewer's report

Title: Morbid obesity in women on the rise: an observational, population-based study.

Version: 1 Date: 30 January 2013

Reviewer: Kathryn Backholer

Reviewer's report:

This is a well written manuscript that examines the change in mean BMI and the prevalence of BMI categories over 10 years (1993-1997 – 2004-2008) in a population of adult women from the Geelong Osteoporosis Study. The question posed by the authors is well defined, however although the aim of the study is regarding morbid obesity, much of the introduction and the results are focused on the whole BMI spectrum. The methods and the data are sound and the limitations of the work are clearly identified in the discussion. I have the following comments that I hope will be of assistance to the authors:

Major Compulsory Revisions

• As stated above, the aim of the study is focused on how the prevalence of morbid obesity has changed over time, yet the introduction is generalised to all obesity and the results encompass the whole BMI spectrum. If the aim is indeed to examine morbid obesity, then the introduction could be tailored to focus on this, rather than the health and economic implications of obesity in general.

• Similarly, the authors test for an interaction between age and time period on change in BMI over time. They then conclude in their discussion that the results indicate that the increase in the proportion of morbid obesity was not restricted to particular ages or different SES groups... and that the study showed an increase in the prevalence of morbid obesity across the SES spectrum. However it is not clear to me where/how they have addressed these specific questions. The interactions tests show that the change in mean BMI over the two time periods did not differ across SES or age categories – it does not test how morbid obesity has changed over this time period across SES or age groups. With only 34 and 44 morbid obese individuals in 1993-7 and 2004-8 respectively it is very unlikely that there would be sufficient power to test this. However, the conclusions made should align with the statistical tests conducted and thus the results obtained.

Minor Essential Revisions

• Please define morbid obesity in the second sentence of the introduction.

• Reference 2 appears to relate to an article in The Age. Please provide reference to the actual ABS report here.

• The terms moderate obesity (grade I), severe obesity (grade II) and morbid obesity (grade III) are used throughout. It may be simpler to just refer to
grade/class I, II and III obesity. Morbid obesity (class III obesity) in adults can be defined as a BMI of equal to or greater than 40kg/m2, or a BMI over 35kg/m2 with obesity-related co-morbidities (Talbot et al, MJA, 2005). Simply using grades or classes of obesity would ensure clarity and consistency throughout. At times this is not clear - for example, in the discussion the authors discuss surgery and other gastrointestinal interventions for people with severe obesity – according to their definition this refers to only those with a BMI between 35-40kg/m2.

• In the first sentence of the discussion it is stated that there has been a shift in the population distribution of BMI, with a mean increase of 4.2%... please clarify – a mean increase in what?

• Please add axis titles on figure 1

Discretionary Revisions

• The authors conclude that because the increase in morbid obesity prevalence was same across SEP groups that population approaches to address the rising rates of obesity may be warranted. However, even if the prevalence of morbid obesity was increasing at a faster pace for the lower SES groups i would argue that a population-wide approach would still be the best option to address this. It is known that individuals from lower SES backgrounds, compared to those from higher SES backgrounds, are less likely to respond to interventions that require behaviour change. Population approaches that change the underlying conditions in which behaviours occur are more likely to affect individuals equally and thus are more likely to reduce the prevalence of obesity for all sub groups of the population, ensuring that inequalities do not widen further.

Level of interest: An article whose findings are important to those with closely related research interests

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