Reviewer's report

Title: Changes in body weight, body composition and cardiovascular risk factors after long-term nutritional intervention in patients with severe mental illness: an observational study

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Reviewer: Jean-Pierre Chanoine

Reviewer's report:

Hassapidou et al followed 989 obese psychiatric patients undergoing a 9 month nutritional intervention. Only 145 patients completed the 9 month study. These 145 had a 9.7 kg weight loss.

The paper is clearly written. I have the following comments.

Major comments

1. P5 L6: "...All patients were found competent by a psychiatrist...". Please clarify if this is by an independent psychiatrist (not involved in the study) or by their treating psychiatrist (in which case there may be ethical issues).

2. Conflict of interest. The authors mention that they have no conflict of interest. However, the study is supported by a grant from Eli Lily Greece, which makes CNS drugs. Please mention clearly that Pharmaserve Lilly had no input in any stage of the study (concept, design, study itself, writing..).

3. Table 1. Please check the height value. It seems very high for a population that is predominantly female (mean height in girls is < 165 cm in Greece, see Sex Differences in the Secular Changes in Pubertal Maturation; A Papadimitriou, Pediatrics 2001;108;e65).

4. Table 1. Please check the SD for height, which is very low (0.9 mm). Is it the SE?

5. Table 1 and 4: the units of the biochemical parameters are listed as International Units (mmol/L) but the values seem to be in conventional units (mg/dl). Please clarify.

6. Table 2. BMI A vs B: Did the BMI go up from 30.8 to 32.7? This is inconsistent with the body fat and WC changes. Please check.

7. Results: what were the characteristics of the “responders” (those with the best results at 9 mo): did they differ by age, sex, baseline characteristics from those who did not complete the study?

8. Limitations: this study has many limitations that need to be not only mentioned but discussed: no control group so the role of intervention itself is unclear, very large drop out (larger than in the classical obesity study, please discuss role of underlying pathology), relatively short duration (less than 1 year).
9. Drop out: what happens to the weight of the patients who dropped out? I presume that the patients are still followed by their psychiatrist. It would be very important to have their weight (‘natural control group”).

Minor comments

a. P5, end of first paragraph. The description of drop outs should only be present in the “results” section

b. Fig 1. Is this figure representing only those who completed the study? If not, it duplicates the Table and should be deleted. If yes:
   - Please clarify that this refers to the 145 patients who completed the study
   - The font of the Y axis should also be larger for better reading.
   - The legend mentions “weight loss” but the figure reports the actual weights.

d. Table 3. These correlations are very much expected. I suggest to delete the Table and to mention the results in the text.

e. Table 1. Please list the range of the age of the patients in addition to mean (SD) for better description of the population.

f. P9. Please delete the conversion into pounds. Weight can be given in kg only.

Level of interest: An article of importance in its field

Quality of written English: Needs some language corrections before being published

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