Reviewer's report

Title: Age-related bone turnover markers and osteoporotic risk in native Chinese women

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Reviewer: Thomas Travison

Reviewer's report:

This is an interesting assessment of association between bone turnover markers and osteoporosis in a somewhat understudied population. It is generally well-written and the presentation is clear. That the design is cross-sectional is a weakness but the topic is still of interest in my opinion. Some correctable choices in terminology could be fixed to improve the presentation. Some additional description of analyses is required.

Major compulsory revisions

1. Abstract describes the article as modeling the 'risk' of osteopenia and osteoporosis, but the analysis cannot track new diagnoses (it is cross-sectional). Do the authors take the position that t-score indexes risk of osteopenia / osteoporosis? It may be best in abstract to indicate that the analysis is dealing with prevalence and T-scores, and expand thinking as to "risk" per-se in the intro and discussion.

2. Results (in particular describing Table 3) must identify which models are controlled for what factors. This information should be in the footnote to Table 3 as well. I recommend choosing a common set of covariates, adjusting each association for these, and describing this in the footnote.

3. In Table 2, reader would be better served with a 95% confidence interval for each cell rather than noting p-values. Two digits for the correlation is sufficient.

4. Since the linear models are adjusted for various factors, it would make sense to do the same in the analyses of prevalence using, say, logistic regression.

5. Figure 2: is osteopenia shown here, or osteoporosis?

6. Odds ratios (table 4) will overestimate risk ratios substantially in the range of prevalences described here. Authors should note this and consider the implications for the presentation.

Minor essential revisions

1. Table 1 would be less busy if appropriate rounding was implemented. For example, height to the nearest centimeter is adequate.

2. Figure 2: 'prevalence rate' should simply be 'prevalence'
Discretionary Revisions

4. I find the bar diagrams somewhat difficult to read. Authors might consider replacing with line figures.

**Level of interest:** An article of importance in its field

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

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

**Declaration of competing interests:**

I declare that I have no competing interests.