Reviewer's report

Title: Disparities in bone density measurement history and osteoporosis medication utilisation in Switzerland: Results from the Swiss Health Survey 2007

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Reviewer: Michael Davie

Reviewer's report:

Thankyou for asking me to review this paper, which sets out to discuss why Swiss nationals have Bone density measurements or not and whether BMD usage relates to SVGO proposals.

My criticisms and uncertainties are as follows:

METHODS

1. P4-5. Was the CATI done under the direction of the Swiss Statistical Office or is the MIS-Trend a separate organisation? PARA 1.

2. Going on to P15, it appears that the Swiss Health Survey 2007 was doing some of the same things as this paper. I was not clear what this paper was doing over and above the SHS 2007 (I regret that to read that in French would take me too long). PARA 1

3. P6. Were subjects asked when they last had a BDM? The relevance of a scan 10yr ago to BDM now is a much debated question. PARA 2

4. P6. Were calcium and vitamin supplements included in the questionnaire? (Last PARA of osteoporotic risk factors)

5. P6. It would be helpful if a little more data were provided here about the national (as opposed to the local osteoporosis society) recommendations are for having a BDM or the general public health service and what they are for private insurance. I appreciate that earlier it had been stated that screening was not recognised but a risk factor was – but do private schemes have the same criteria. Further data about who can and cannot have BDM appear on p 14 but would be better here.

6. P7. Osteoporosis risk factors. The lack of fracture data is a serious omission

7. P7. What is a serving of milk? Generally about 800-1000mg calcium/day is regarded as adequate. How much of this was being provided by milk? 2nd PARA osteoporosis risk factors

8. P7. Line 15. Should weight be ‘weighting’? Or did the SFSO supply the weight (in kg)? 1st line of Statistical analysis

9. P8. I am certainly no ethicist but I did wonder about the fact that ethical approval was not required. As I understand it the names were supplied by the Swiss Government organisation (governments being able to what they want –generally), but the subjects were phoned to complete a questionnaire – was this
by government order? I agree that ethics would not be required to analyze the data, but what about collecting the data? (Last paragraph of statistical analysis)

RESULTS
1. P9. Line 6. ‘In agreement with that finding’...this is very local and means little to outsiders. I had even forgotten that there was an Italian speaking region in Switzerland – the documents that I looked up on the internet were either in German or French. (First paragraph)
2. P9. Line 11. Would the piece about smoking be best in the next section (Factors associated...), but see next. (3) (1st paragraph of BMD prevalence in women)
3. P10. Smoking again. It seems as though smoking is not associated with BDM after corrections.
4. P10. Any association of BDM with milk intake? (Para 4 of factors associated with BDM utilisation)
5. P10. BDM prevalence is associated with falls in the last 12 months. If BDM is measured as ever vs never how can a BDM at eg 65yr have any relevance to someone falling at eg 75yr? It does seem important to know when the BDM was done. Being underweight is possibly understandable since women tend not to change that much (generally). (Last para BDM utilisation)
6. P10. Line 14 states that BDM was associated with physical activity (though it doesn’t say which way). Line 17 states that women with higher physical activity. The two sentences are not incompatible but it would be better to state activity (line 14) was high. Indeed lines 15-19 could be incorporated into the previous sentence.(As in 5)
7. General comment on results in women. It would be useful to have fracture data (this was a serious omission though acknowledged in the limitations) and given the current interest in FRAX would be very useful to know what proportion of these women even ought to have had a scan. They seem to have all the data bar fracture. Secondly was there any way in way BMD requests could be associated with number or type of co-morbidities (which might explain some of sociological aspects – the more ill people are the worse their sociology?)
8. P11 line 8. I think BMD and BDM are getting mixed up. The authors need to look at these abbreviations carefully within the text (MINOR POINT).
9. Osteoporosis medication – was this obtained at the interview or via the Swiss health Survey? The authors need to state that medication might be used even if BDM had not been obtained eg in persons with a vertebral fracture.

DISCUSSION
1. The discussion is rather long, and doesn’t highlight the points that they wish to make from the results. The results seem to show that contact with a doctor (why is that? Less fit, more worried, doctor associates one disease with another esp gynaecologists), other screening, being underweight, having the right type of insurance, falling and being fit were associated with having a BDM in women.
Age is obviously important but John Kanis in his FRAX makes the point that as people tend to die after age of 80, the 10 year risk of fracture falls.

2. P14. 2nd paragraph. ‘Women with supplementary’. Women have this insurance generally because they worry and can afford it. And if they have they use it. The authors have the data to say whether this is worthwhile or not. We don’t actually know whether any of the women are osteoporotic, but it does seem as though (p15 bottom) that minor risk factors are not associated with having a BDM, although major ones are. (Last 2 paragraphs of socio and demographic factors)

3. P14-15. It does not surprise me at all that men have no interest in BDM – osteoporosis is not seen as a problem whereas Ca prostate is (and in fairness osteoporosis does not occur that commonly in men). Conversely in women breast cancer across all income groups worry about Ca breast, whereas it is clear from the present data that only the better off worry about osteoporosis. Cancer has a far bigger impact on the public mind than does osteoporosis. Do they have any comment on this aspect.

4. The points of this paper have I feel been lost in the words. Going back to P4 in the last paragraph of the introduction, one wonders how much has already been done in SHS 2007. Specifically the authors need to address the factors that they set out achieve in that paragraph and come to some conclusions about the impact of sociological factors and what needs to be done to improve the situation. Some comment about the inappropriate use of BDM, which is very evident from their data, would be useful. The absence of fracture data and absence of comment about FRAX also reduce the impact of the work. The data are worthy but the conclusions lack clarity.

5. Overall they have good data relating to sociological aspects of who has a BDM and who takes medicines, but weak data relating to risk factors. I feel that they may have taken a Swiss database and tried to get results out of it without giving the data provided a critical view first from the point of view of what questions they are asking. I may be wrong, and if so I apologise – referees are not infallible!

TABLES
It is always good to see data presented. They are rather comprehensive, but tables are always worth space.

MAJOR REVISIONS:
If there are no data about when BDM was done, no fracture data, then risk factors are better left out. They might concentrate on the sociological factors alone which are of interest.

The discussion needs more definite conclusions about what the data mean for future development.

Minor
Get BDM and BMD the same.
**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Acceptable

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**

Fees etc. Yes. I have received fees from AMGEN for lectures and am a member of an osteoporosis interest group supported by AMGEN

Stocks etc.NO

Patents NO

Competing interests: NO

Non financial competing interests: NO