Reviewer's report

Title: Bone Mineral Density in healthy Iranian population: A Cross sectional study

Version: 1 Date: 21 October 2004

Reviewer: N Yoshimura

Reviewer's report:

General

Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

This study measured the bone mineral density of the Iranian population by dual energy X-ray absorptiometry to investigate age and gender differences in bone mineral density, and its correlations to BMI and WHR. While this manuscript is very interesting from the viewpoint of ethnic differences, it requires revision because the entire manuscript is not well written. Particularly, the "Methods" section is insufficient, and the "Introduction", "Results" and "Discussion" all require revision to address misinterpretations of data.

The issues to be addressed in the present manuscript are as follows:

1. Introduction
   The purpose and background of the study are unclear. The authors need to review other studies on the distribution of bone mineral density in general populations and briefly state how the present study is different, and why the study was conducted.

2. Methods
   The biggest problem with the present manuscript is the "Methods" section. First of all, the sampling methods are not explained in sufficient detail.
   1) What is the meaning of “50 clusters”?
   2) How many clusters are there in Tehran?
   3) How were these 50 clusters chosen?
   4) In the "Abstract", it is stated that the subjects were "randomly selected", but in the "Methods", it is stated that the subjects were selected by "cluster random sampling". Please clarify how the subjects were selected.
   5) Of the individuals who were initially selected, how many refused to participate in the study?
   6) Many exclusion criteria were listed, but how were these chosen?
   7) Of the individuals who consented to participate in the study, how many were excluded due to the exclusion criteria?
   8) How did the authors determine that the subjects in the present study are representative of the general population in Iran?
   The authors need to address these issues because the above information is necessary to minimize selection bias and determine whether the results of the present study can be extrapolated to the general public.
Also, I assume that the authors assessed osteoporosis based on WHO criteria, but the authors need to state how the peak bone mass and standard deviation for the Iranian population were established.

3. Results
1) The study compared bone mineral density among the different age groups, but the number of subjects in each group is not stated.
2) The study compared bone mineral density between the two genders, but the respective numbers of men and women are not stated.
3) The study compared the relationship between bone mineral density and BMI, but only the overall average is stated. Furthermore, the average and standard deviations for BMI for the different age groups and genders are not stated.
4) The study compared the relationship between bone mineral density and WHR, but average and standard deviations for body weight and WHR for the different age groups and genders are not stated.
5) This cross-sectional study did not investigate changes in the bone mineral density of the subjects. It is therefore not appropriate to say that bone mineral density decreased, or that a decrease in bone mineral density accelerated. Also, based on the results of the present study, it is not meaningful to discuss percent decreases in the bone mineral density.
6) While the study compared the relationship between bone mineral density and menopause, it is not clear how many people were menopausal, and it is also not clear if the data were age-adjusted.

4. Discussion
The authors need to rewrite the manuscript by addressing the comments above and then rewrite the "Discussion". In the "Discussion", the authors need to state, in their own words, what was clarified by the present study and how it differed from previous studies.

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Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)
The numbers for the mean BMD of the femur for the 20-29 year-old, and 30-39 year-old female cohorts appear strange. Are the means and SDs reversed?
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Discretionary Revisions (which the author can choose to ignore)

What next?: Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

Level of interest: An article of limited interest

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

Statistical review: No

Declaration of competing interests: