Reviewer's report

Title: Plasma concentrations of 25-hydroxyvitamin D among Jordanians: Effect of biological and habitual factors on vitamin D status

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Reviewer: David Hanley

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This is a paper of reasonable importance in documenting that a high proportion of young, apparently healthy Jordanians have what would be considered inadequate vitamin D levels, bordering on levels that would be associated with rickets and osteomalacia. In the subjects wearing Hijab and Niqab garments, the authors demonstrate the effect of extremely high degree of skin coverage in preventing vitamin D synthesis with resultant lower levels of 25-OHD.

The data are otherwise not surprising and complement earlier reports of a high prevalence of low 25OHD levels in Jordanians (Mishal AA. Osteoporos Int 2001; 12: 931–935; Gharaibeh MA and Stoecker BJ. Eur J Clin Nutr 2009; 63: 1320–1326), although the latter paper did not find dress style to be a factor of importance in D levels. To answer the questions provided in your initial request to review, I offer the following response:

1. Is the question posed by the authors well defined?
   Yes

2. Are the methods appropriate and well described?
   Yes

3. Are the data sound?
   Yes

4. Does the manuscript adhere to the relevant standards for reporting and data deposition?
   Yes

5. Are the discussion and conclusions well balanced and adequately supported by the data?
   The discussion includes speculation about the roles of polymorphisms of the genes involved in vitamin D metabolism, and a conclusion that this should be the next stage of research in the study population. This is only one of several logical paths subsequent research should follow. More important, in my view, would be the determination of whether the low levels of 25-OHD have any correlations with parameters of bone health or other health variables. Another approach would be to examine variations in Vitamin D-Binding Protein in the subjects.

Since some “experts” have claimed that sunlight exposure of face and hands
provides for synthesis of adequate amounts of vitamin D, this paper could point out the fallacy of that statement

6. Are limitations of the work clearly stated?
Limitations are not discussed. Some important information is missing. For example the authors imply but do not state whether dairy products are fortified with vitamin D in Jordan.

7. Do the authors clearly acknowledge any work upon which they are building, both published and unpublished?
Yes, although they missed the Gharaibeh reference (above)

8. Do the title and abstract accurately convey what has been found?
Yes

9. Is the writing acceptable?
Minor corrections are needed:
(a) Page 3, second line: "...suggesting that sun exposure although should be enough..." should read "...suggesting that although sun exposure should be enough..."

(b) Page 5, line 6: Table 1 does not refer to any food consumption variable being "low, medium or high"

(c) Page 9, line 6: "...color of cotton clothing such as white is less blocker than black ones [23, 24]." should read "...a lighter color of cotton clothing such as white is less effective in blocking ultraviolet light than black [23, 24]."
Page 9, line 12: "dairy", not "diary"

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

**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.