Reviewer’s report

Title: Vitamin D levels and deficiency with different occupations: a systematic review

Version: 2 Date: 03 Apr 2017

Reviewer: KATHRYN HART

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Vitamin D levels and deficiency with different occupations: a systematic review.

Revision 2 document (revision 1 not reviewed)

From previous comments:

The abstract gives no indication of how the potential confounding by factors such as gender and body composition (which would be expected to differ significantly between occupational groups) may have been accounted for. Could this be added?

- I thank the authors for their response to this point and would again suggest some indication of this limitation is added to the abstract to reflect what is in the main discussion.

I still have reservations about the potential overlap of occupation categories since you are reliant on the primary authors descriptions and therefore have to assume that if they do not state their population are shift workers (for example) then they are not (as opposed to this just not being reported) and the appropriateness of recommending widespread screening and therefore, presumably supplementation. However the majority of my concerns have been addressed and certainly the revised manuscript is more streamlined and focused and I thank the authors for their attention to the previous comments and suggestions.

Additional minor queries/ corrections:

Pg 12, line 24 - Data the on average serum 25-(OH)D levels - word order error
Pg 13, line 11(approx.) - before stating the proportion who were women can you also include the total number of subjects covered by the included studies and the range of sample sizes?

Pg 14, 33 - 77.7% of indoor workers - report all % as either whole numbers or 1 decimal place but not a mixture

pg 16, line 54 'Additionally, approximately 65% and 72%' - why approximately?

pg 17, line 12 - physicians and; - remove 'and'

pg 19, line 12 'Additionally, the 25-(OH)D levels in summer and autumn in outdoor workers were significantly different relative to levels found in winter (p<0.0001) and spring (p<0.0001).' - suggest moving this to previous page where you present data from outdoor workers.

pg 20, line 51 'Additionally, we observed a higher prevalence of vitamin D deficiency in all occupational groups examined than the reported population burden of vitamin D deficiency in multiple populations, suggesting that workers may be particularly vulnerable to vitamin D deficiency [25, 43].' - could you perhaps give an example, e.g. the prevalence in one of your working populations compared to the prevalence in the same country's general population

pg 22, line 27 - compounding factor - do you mean confounding?

References - minor formatting errors - please check all, e.g. 2 and 12

Table 2. First line - is this an inter-assay CV? Others are specified as such

Table 3 - requires footnote to give reference for deficiency cut off - this is in main text but tables should 'stand alone'

Table 4 - as for table 3

Figure 1 'Error bars represent pooled standard error of means computed as shown in the method section' - assuming journal policy is for figures to stand alone more detail is required of methods used
Figure 2. % vitamin D deficiency in different occupational groups - % in words

Figure 3 - as for figure 2

Could figure 2 and 3 be combined? - 2 bars per group - would be a more efficient use of space and allow direct comparison of deficiency and insufficiency rates

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Unable to assess

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

Yes

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I recommend additional statistical review

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