Reviewer’s report

Title: Assessment of a new questionnaire for self-reported sun sensitivity in an occupational skin cancer screening program

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Reviewer: R Bränström

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Concerning manuscript titled:
Assessment of a new questionnaire for self-reported sun sensitivity in an occupational skin cancer screening program

Recommendation: Revision and re-submission

This paper reports on an important field of research, and there certainly a need for better instruments to measure sun sensitivity. The study methodology is appropriate and the study well preformed. However, I have some comments regarding analysis and the conclusions drawn based on the results. My major concern with the study is that it really does not increase our knowledge about the reliability or validity of measurement of sun sensitivity but rather just presents us with a new scale with unknown validity. My second concern is that the scale used to measure sun sensitivity includes both indicators of skin sensitivity and independent predictors of skin cancer such as freckling. This makes the scale unsuitable for us in epidemiological studies as their purpose often is to examine the influence of different separate risk factors on the development of skin cancer.

I am well aware of the problems related to the use of the currently most used scale to measure skin sun sensitivity, the Fitzpatrick scale. And I would say the biggest problem with that scale is that it relies on self report of ability to tan and likelihood of sunburn. Both these issues are most likely strongly influenced by individual wishful thinking and previous experience. It is also influences by self image and preferences. This study used a measure with the exact same problems, and this is dealt with or discussed in the paper. The new suggested scale is likely to confuse rather that clarify our understanding of skin sun sensitivity, by using many quite separate indicators.

Method

It is confusing that the authors chose to make categories base on the RTS. Wasn’t the idea to get a continuous normally distributed measure of skin sun sensitivity.

It gets quite confusing to refer to the Health Related Quality of Life scale to justify why the RTS-scale can be used as a continuous measure. A quality of life scale is a scale that uses a lot of items to measure the same thin, and several questions are used to get a more precise measure of an underlying concert.
However, the RTS is not a scale in that sense but rather an index made out of many separate indicators of the measured construct. The authors also illustrate how different the part of the index is showing the low correlations between some of the questions.

Result and discussion
The big gender differences found underline the problem with self-report of skin sun sensitivity. It is unlikely that there are “real” gender differences in freckling. The correlations between the separate items in the RTS, and the RTS total score can be presented in a table. Table 4 can be removed, it does not contribute to our understanding of skin sun sensitivity. I do not understand the purpose of making categories of the RTS if the scale is normally distributed and continuous, this reduces the information given by the scale, and I suggest that this section be removed.

I do not agree with the conclusion that the scales is an improvement of current standard. It ads confusion by including separate skin cancer risk factors along with sun sensitivity items. It would be better to try to improve the FP measure. If Uter classification in never used to measure skin sensitivity, I do not understand why it is mentioned in the discussion and in the paper.

I do not understand why young people would benefit more than anyone else from a good assessment of sun sensitivity.

I think a measure of skin cancer risk would be much more useful for everyone.