Reviewer’s report

Title: Long-term life dissatisfaction burden is associated with inflammatory alterations

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Reviewer: Nicolas Rohleder

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The aim of the study presented here was to test whether “life dissatisfaction”, accumulated over 7 years in a longitudinal study, predicts current levels of a small selection of biomarkers. Results show lower serum adiponectin, together with lower social supported and lower sleep quality in high life dissatisfaction.

Testing prospective relationships of life dissatisfaction with biomarkers of inflammation seems to be an important approach, with potentially impactful findings. However, the present study appears to have too many problems to really make an impact. See below.

One of the larger shortcomings is that the authors are not making good use of their data. although they have a sufficient number of participants (>300) and number of observations (4), the authors apparently try to simplify their data as much as possible, by (a) just summing up life dissatisfaction scores over the 4 assessment times, and (b) using those summed up scores for a median split. This is clearly insufficient. I would have expected at least to (a) test whether potential patterns in individual development of life dissatisfaction over time (i.e. decrease, increase, general low, general high, low vs. high variability, etc) are related differentially with biomarkers. This will require more sophisticated statistics.

This analytical weakness might also be (or might not be…) the reason for not finding relationships of life dissatisfaction with inflammatory biomarkers measured. The problem here is that from what the authors present here, it is impossible to draw any conclusions. Not finding a relationship might indicate that maybe life dissatisfaction is not a strong enough stressor to stimulate pathophysiological processes that could be picked up by increased inflammatory biomarkers, but it is entirely possible that we are just not finding these results because the authors did not analyze their data right. The summary of this point is thus simply a re-iteration of the point above: The authors are strongly encouraged to take another look at their data, and apply more sophisticated analysis techniques. Such techniques can and should also include a control for potential confounders / covariates.

Level of interest: An article of importance in its field

Quality of written English: Acceptable
Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests: no competing interests