Author’s response to reviews

Title: Biological and other health related correlates of the long-term life dissatisfaction burden

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Author’s response to reviews: see over
We thank the reviewers for their constructive comments concerning our manuscript on long-term life satisfaction. We have addressed these comments point by point and made alterations according to them with coloured text in our revised manuscript. We hope that these alterations have improved the manuscript and that it is now suitable for publication in BMC Psychiatry.

Sincerely,

Dr. Teemu Rissanen, corresponding author
OUR RESPONSES

1. TO THE EDITOR

EDITORS COMMENTS:
The manuscript improved through the major revision. However, the data should be re-analyzed along the comments given by reviewer 2; in particular avoiding the median split, which is bad practice statistically (see, e.g. http://biostat.mc.vanderbilt.edu/twiki/bin/view/Main/CatContinuous). Please use continuous covariates and examine whether spline transformations (see Harrell, Regression Modeling Strategies, available online at http://biostat.mc.vanderbilt.edu/twiki/pub/Main/RmS/rms.pdf) improve models, e.g., using BIC or AIC.

RESPONSE 1: The data has now been re-analyzed by our biostatistician in University of Eastern Finland. Life satisfaction burden has been used as a continuous variable instead of dichotomous categorization. Due to the non-normal distribution of continuous life dissatisfaction burden (skewness 0.701) a logarithmic transformation was made resulting in a logarithmic life dissatisfaction burden score i.e. logLSburd (skewness 0.175), which was suitable for the linear regression analyses.

Correlation terms of both Pearson and Spearman were assessed between continuous logLSburd and the following continuous variables: age (Pearson -0.141, p=0.014; Spearman -0.156, p=0.006); adiponectin (Pearson -0.139, p=0.016; Spearman -0.133, p=0.021), body mass index (ns), hSCRP (ns), resistin (ns), IL6 (ns) and TNF-α (ns).

Secondly, re-analyses of all the previous models (see manuscript, Table 2A-B & Final model) were made with linear regression including the life dissatisfaction burden score as a continuous variable (logLSburd), but all the other variables remaining the same. They all showed the same trend as the models obtained with logistic regression including 2-category LS. The detailed results are described below with all the significantly correlates being bolded.
1) The first linear regression model (model 1: method forward) with logLSburbd the results were: poor social support (B= 0.144; Beta=0.323; t=6.353; p<0.001), smoking (B=0.097; Beta=0.257; t=5.218; p<0.001), poor sleep (B=0.053; Beta=0.179; t=3.564; p<0.001), marital status (B=0.057; Beta=0.136; t=2.736; p=0.007), gender (ns) and age (ns).

2) The second linear regression model (model 2: method forward): use of statins (B=-0.072; Beta=-0.210; t=-3.701; p<0.001), adiponectin (B=-0.001; Beta=-0.135; t=-2.364; p=0.019), metabolic syndrome (B=0.038; Beta=0.123; t=2.149; p=0.032), gender (ns) and age (ns).

3) The final linear regression model with all the significantly correlates from the first and second linear regression model together with logLSburbd: poor social support (B=0.139; Beta=0.315; t=6.17; p<0.001), smoking (B=0.088; Beta=0.229; t=4.599; p<0.001), poor sleep (B=0.052; Beta=0.176; t=3.492; p=0.001), marital status (B=0.052; Beta=0.125; t=2.505; p=0.013), use of statins (B=-0.049; Beta=-0.143; t=-2.890; p=0.004), adiponectin (B=-0.001; Beta=-0.118; t=-2.367; p=0.019) and metabolic syndrome (ns).

Thus, according to these correlation and linear regression analyses, our previous results were supported and the statistician did not suggest any further analyses. We thank for this constructive comment, which made our manuscript more reliable. We hope that our work can now satisfy the editor as well as the reviewer Nicolas Rohleder.

2. RESPONSES TO THE REVIEWER, Ines Kaufmann

The manuscript in its present form is now suitable for publication.

RESPONSE 2: We thank the reviewer for her previous comments and her work.

3. RESPONSES TO THE REVIEWER, Nicolas Rohleder

My only major concern was that the authors have relied on a categorial approach in their analytical strategy. If I correctly understand the authors’ point-by-point response, as well as the revised manuscript, the authors have responded to my comment (a) that they find the median split acceptable, and (b) they added
another categorial approach by splitting their sample into three groups based on stability or increase (not decrease) of life satisfaction. They do not find biomarkers different between these new three groups. I am not surprised by this given my previous argumentation and recommendation that more sophisticated data analytic strategies would be helpful (this implies making use of the continuous data in the life satisfaction variable)

RESPONSE 3: This was true, but now the data has now been re-analyzed by the help of our biostatistician in University of Eastern Finland. Please, see the results of these new analyses with continuous LS variable in response 1 to the Editor. According to these correlation and linear regression analyses, our previous results were supported and our statistician did not suggest any further analyses. We thank for this constructive comment, which made our manuscript more reliable. We hope that our work can now satisfy the reviewer.