Reviewer’s report

Title: Is the quantified self anxious or empowered? A cross-sectional study exploring users' affective responses to their wearable activity trackers, and the role of personality and individual differences.

Version: 0 Date: 30 Oct 2018

Reviewer: David Ellis

Reviewer's report:

I enjoyed reading this paper and think it covers an important topic that many within health and psychology need to be grappling with. Specifically, the idea of using individual differences to understand the uptake and use of wearable devices is an area worthy of further investigation. We recently flagged this as a key area requiring more research here:


My suggestions for revisions largely focus on the presentation and analysis of results. These recommendations are not intended to appear overly prescriptive and the authors may wish to correct me regarding their approach. However, regardless of what changes are made, more justification is required when it comes to the selection of specific statistical tests.

Procedure and data analyses:

Table 1 showing the mean differences for all measures between current and previous users is helpful. However, this could also include if differences between the groups are significant across every measure (using chi-squared or t-tests). Reliability coefficients should also be reported for each self-report measure.

Experiences of positive and negative effect:

T-tests are used to compare positive/negative affect scores for wear/not wearing conditions. These are run separately for current and previous users. However, I wonder if the authors have considered using an ANOVA to compare these differences. This would essentially combine the above section with 'Differences in experience of affect between current and previous users'

Ideally, this analysis might involve a 3-way mixed ANOVA with each factor comprising of 2 levels. 2 factors are within and 1 between:
Wearing (yes/no), Affect (positive/negative), User (existing/previous), DV= affect score

2x2x2

However, this probably isn't suitable given the small sample of previous users currently available. Therefore, a 2x2 within ANOVA is possible for the currently wearing group alone.

Wearing (yes/no), Affect (positive/negative) 2x2, DV= affect score. Suitable post-hoc t-tests may follow based on the results.

T-tests in isolation may need to remain for the previous wearing group due to issues concerning statistical power. Ideally, this sample would be larger and include equivalent measures of personality.

It would also be helpful to report effect sizes throughout.

Associations between affect, and demographic and personality trait characteristics:

Adding in single or multiple personality factors as covariates to the above suggested ANOVA, would result in an ANCOVA. Again, given sample constraints, this would only be possible for existing users. This would replace the reporting of the GLM model in its current form. The GLM at present has a large number of variables entered given the sample size, so some discussion/justification of statistical power is required regardless.

Minor Points

Page 4: Paragraph 2: Background - worth nothing that most of the evidence for beneficial effects is pretty short term. Long-term effects have yet to be convincingly demonstrated (see earlier reference for examples).

Page 7: The participant section needs to include information about mean age and gender split of the entire sample. Alternatively, this could refer to Table 1.

Page 9: It seems odd that 'positive affect when unable to wear was measured' with one item, but the other constructs involved 3 items. Is this a typo perhaps).

Page 9: 'Data were screened for outliers and normality prior to analysis' The authors need to provide more information on how this was accomplished and if any data points were removed as a result. In addition, some discussion of statistical power is required (see earlier comment). This is particularly important considering my earlier concerns around the analysis.

Page 12: One additional limitation is that we don't appear to know how long ago these previous wearers stopped using their device. Presumably there is also quite of variability in the type of tracker, which might need to be mentioned again in the limitations section. Finally, it needs to be
clear in text that personality variables have not been collected from participants who no longer wear these devices (this only appears in the table at present).

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

No

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

Yes

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

Yes

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