Reviewer's report

Title: Triglycerides as a biological marker for repeat re-hospitalization resulting from deliberate self-harm in acute psychiatry patients: a prospective observational study

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Reviewer: Alfonso Troisi

Reviewer's report:

This is an interesting paper applying an approach that is likely to expand in the next few years: the combination of biological and clinical variables in developing risk profiles for vulnerable populations. Currently, our ability to predict suicide is dramatically low and we need new strategies to improve our preventive strategies. The authors should consider the points below to strengthen the validity of their findings.

Major Compulsory Revisions:

- The decision to combine into a single outcome variable suicidal behavior and non-suicidal self-injury is questionable and a possible reason for the discrepancy between this study and previous ones showing the relevance of (low) cholesterol levels. Even though there is an area of overlapping between the two symptom dimensions, suicidal behavior and non-suicidal self-injury differ for a variety of features, including predisposing factors, epidemiological correlates, and pathogenetic mechanisms. It would be interesting to reanalyze the data by separating the two phenomena.

Minor Essential Revisions:

- Reading the abstract, it is unclear if low or high levels of triglycerides were a significant predictor of self-harm. Please, specify.
- In the first lines of p. 4, the authors state that cholesterol levels and DST are not easy markers to include within clinical routine assessment. This is surely not true for cholesterol levels, at least when compared by the marker used in this study (i.e., levels of triglycerides).
- The authors decided to include in multivariate models those predictors that were significant in univariate comparisons. However, it is possible that, sometimes, a multivariate analysis shows the significant impact of a variable that resulted non-significant in univariate comparisons. I am making this point because I think that age is a crucial variable when focusing on risk factors for suicidal behavior and non-suicidal self-injury (separately classified). Thus, I would suggest to include age into multivariate models.
- The authors should explain the rationale and clinical utility to set two different time points (3 and 12 months after discharge) for the analysis.
- Text and style require extensive linguistic revision (e.g. repeat in the title should
be “repeated”).

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests.