Reviewer's report

Title: Does deterioration in mental health after cessation predict relapse?

Version: 3 Date: 16 September 2015

Reviewer: David Haaga

Reviewer's report:

Major Compulsory Revisions: None

Minor Essential Revisions:

1. Section 3.2 indicates that about one-half (50% of 12-month maintainers; 55% of late relapsers) showed deteriorating mental health scores between baseline and 4-month follow-up. As such, this statement in section 4.3 should be revised and tempered:

"There is clear evidence that mental health improves in most people who stop smoking"

Discretionary Revisions:

2. The manuscript appropriately acknowledges that small sample size and attrition set constraints on the interpretability of the findings. It would be useful to supplement this verbal statement with a quantitative analysis of the power of the study, given the number of late relapsers vs. maintainers, for detecting the smallest clinically meaningful effect [as stipulated by the investigators] of mental health deterioration after quitting on subsequent success. If the study had high power to detect any meaningful effect, the null result would become that much more convincing.

3. More might be said about the validity data pertaining to the mental health measure, which is certainly central to the investigation.

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

Quality of written English: Acceptable

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.