Reviewer's report

Title: The SNAPSHOT study protocol: SNAcking, Physical activity, Self-regulation, and Heart rate Over Time

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Reviewer: Aukje A. C. Verhoeven

Reviewer's report:

The present manuscript regards a study protocol for the SNAPSHOT study. This study concerns the associations between trait and state executive functioning with snacking behavior and sedentary behavior using real-time within-subjects measurements. The proposed study is very interesting and has the possibility to be a relevant contribution to current literature regarding self-regulation and health behaviors. Especially the use of real-time measurements adds to the novelty and validity of the current proposal. The manuscript is pleasant to read and clearly written.

The manuscript provides a detailed outline of the included measures and the procedures. Hence, overall, the manuscript gives sufficient information to provide the possibility of replication. There are, however, few issues that require further attention, which are outlined below.

Major Compulsory Revisions

1. Background, paragraph 4: Three implications of the resource-dependent variability of behavior regulation for dietary research are mentioned. The effects of self-regulation, depletion (or related concepts) on diet have been studied before (e.g., Hagger et al, 2013; Kahan, Polivy, & Herman, 2003; Vohs and Heatherton, 2000, Study 3; Wills et al, 2007). The authors should refer to previous literature regarding these implications and could elaborate more on how their study relates to previous findings and what they add to the existing literature.

2. The role of some of the included variables is unclear. Are intention, eating style, typical dietary intake at baseline, and self-reported physical activity at baseline, for example, merely included for descriptive purposes, as a moderator, or included for other reasons? Additionally, it seems Heart rate over time is an important variable in the current study. Yet, it remains unclear what role this variable will play; is it regarded a proxy for executive functioning and treated as an additional measure for state executive functioning? Also, different measures are taken for trait executive function, which is measured with three elaborate assessments. Why is it necessary to include each of these extensive measures? Do the authors have different expectations for each measure? In the analyses, will they be regarded separately or will one score be computed?

3. Little information is provided regarding the proposed analyses. For example, it
is unclear how missing data will be treated. The authors could explain the proposed analyses in more detail.

Minor Essential Revisions
4. In the abstract, it is stated that intentions regarding diet and physical activity are measured (in phase two). However, it seems there is no measure included for assessing intentions in the measures section. Please add how diet and physical activity intentions are assessed.

5. It is unclear whether and, if so, how participants are debriefed.

6. In the Methods section, under 'Heart rate and heart rate variability' it is stated that data can be collected for a maximum of four days. Similarly, under 'Location', it is explained that data are collected across 5 days. Are these two measures always assessed on the first 4/5 days of the measurement week or is there a possibility to vary this between participants?

Discretionary Revisions
7. I would begin the section 'Real time measurement phase' with the paragraph regarding 'Schedule'. In this way, from the beginning on, it is clear for the reader how the measurement schedule will look like and that measurements are taken every hour.

References


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:
I declare that I have no competing interests.