

Review of: "Exploring the Multidimensional Influences on Sleep and Active Heart Rate Dynamics: A Comprehensive Study"

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Potential competing interests: No potential competing interests to declare.

My first comment hasn't been saved?

The theme of this study is original and interesting. The population investigated is significant. The methodology is serious, and the text is well-written as a whole.

I am a little surprised by the fact that, in the "Factors associated ... p 3", the "social factors" are presented in the first place, with observations, admittedly accompanied by references, which seem inevitable while from my point of view they are not obvious. The "heart rate synchronization" of "intimate couples" or "romantic partners" is presented as obvious without really giving any explanation. The conclusion of the paragraph is hasty without further explanation. This theoretical part deserves to be developed.

The other influencing factors are much more obvious and do not require much more description in my opinion. However, it is not always clear which factor is influenced, the rhythm itself or the variability. As an example, in the "psychological factor" part, depression is negatively correlated with HR during the day, but not at night.

In the "behavioral factors," the fact that physical activity is associated with a lower HR is obvious, but only in the under 50s? Moreover, what does it mean that "underscoring the CV benefits of exercise"??

In "measure," p5, it is pointed out that there is no difference in the analysis according to the hours of sleep before or after midnight: why is this notion important?

I have some doubts about the reliability of the Fitbit's measurements, but the associated references nevertheless seem to lend credence to the validity of the measurements. On the other hand, I would be much more skeptical about the calorie measures expended, fat burn calories, cardio calories, and other derivatives which in my opinion are not based on anything serious. In addition, do they provide relevant information in the context of this work?

The discussion, especially concerning social factors, is again presented rather as a presentation of dogma or evidence, and deserves a more critical, deeper discussion with the formulation of hypotheses.

In its entirety, this text lacks depth. A statement of the results is presented, with a formulation of evidence without any real discussion. At the beginning of the measured parameters (some of them in any case: cf. calorie & ...), we expect a more

critical reflection and a clearer formulation of the hypotheses.