Reviewer's report

Title: Computer use and stress, sleep disturbances, and symptoms of depression among young adults - a prospective cohort study

Version: 1 **Date:** 22 February 2012

Reviewer: Bengt Arnetz

Reviewer's report:

This is one of the first prospective studies concerning the possible relationship between internet use and sleep and mental health outcomes. This is an important area, especially in terms of health implications from ever increasing and intense internet use among young people. They are also typically connected by means of non-traditional computer means, such as through the use of PDA, personal digital assistants.

The Introduction is up-to-date and covers most or the relevant work. Although early work by Arnetz et al is site, he also published a prospective psycho-physiological study of advance software designers in JOEM in the 1990´s that is of relevance.

1. Is the question posed by the authors well defined? Yes.

Are the methods appropriate and well described? Yes. However, some of the exposure variables are unclear and not ideal. For example, performance is measures as a question where the respondent has to allocate decreased performance due to stress. This is a typical weakness. The questions contains 2 questions, one component is about stress the other is about performance. The question should have been separated into two questions. In framing it as one question, stress typically becomes associated with decreased performance. (Discretionary revisions)

It is unclear in terms of exposure whether the study addressed what the (smart)phone was used for. Using the period of follow-up , there was a dramatic shift from regular cell (mobile) "dumb" phones to "smart"phones, where users use it for internet connectivity, including social functions and gamling. Did the authors combine internet use from all different sources, e.g. desktop, lap top, pda including Smartphones, or was the internet exposure time only calculated based on CU. The authors need to expand and make the exposure assessment more specific. Clear and reproducible information as to exposure and outcome variables are important (Major compulsory revision).

It is also unclear why the authors used a non-validated stress exposure variable consisting of only one question. Please provide validation data for this important exposure variable. Moreover, the authors have apparently used only fractions of validated scales for Sleep and Mental Health outcomes. Since this is an important aspect of the study, the author needs to expand further on this choice

and provide psychometric data, if available. The Social support variable is also not very well validated or motivated as why this variable specifically was used. It is not the most typical variable used in studies such as these (Major compulsory revision).

The Cox regression analysis as well all the prospective analyses should not have deleted persons with problems. This is a non random deletion. This comes on top of a very poor response rate, below 40% on the baseline, especially for men. As the authors discuss, the outcome variables are highly fluid and variable health symptoms. Rather, the modeling should have concerned for baseline health and looked at the 1 year outcome variable as well as possible interaction between baseline health and computer exposures (Major compulsory revision).

3. Are the data sound? Please see above.

4. Does the manuscript adhere to the relevant standards for reporting and data deposition? Yes. But, the authors are encouraged to include a figure detailing the recruitment and loss to follow up using CONSORT recommendations. (minor discretionary revision)

5. Are the discussion and conclusions well balanced and adequately supported by the data? The discussion is excellent in terms of results, strengths and weakness. However, the study is presented as a prospective study, which it is. But, the Discussion should be expanded as to the "baseline" health of the participants and possible relationship to health and how this might impact results. But the authors take the implication of this study too far. There is little support for the recommendations, and the recommendations become rather general with flair of ICT being a risk factor, although some beneficial effects are being discussed. For example UC and social support among women (Discretionary revision) 6. Are limitations of the work clearly stated? Yes.

7. Do the authors clearly acknowledge any work upon which they are building, both published and unpublished? Yes 8. Do the title and abstract accurately convey what has been found? Yes. However, please see comments above, especially in terms of practical implications of the study.

9. Is the writing acceptable? Yes

Quality of written English: Acceptable

Declaration of competing interests:

I declare that I have no competing interests.