Reviewer’s report

Title: Analyzing repeated data collected by cell phones and frequent text messages. An example of Low Back Pain measured weekly for 18 weeks.

Version: 2 Date: 7 February 2012

Reviewer: Luciana Macedo

Reviewer’s report:

I believe that the paper is very relevant and include the discussion of very relevant method. I have one major consideration and a few minor considerations.

Major compulsory revisions:

I understand the concept of using an example to go over the different types of analysis; however, I think that in this case it got a bit confusing. Although “the overall objective of the study was to explore and describe different methods of analyzing repeated data”, I think the focus was lost throughout the study and shifted to back pain and SMS measures. For instance, the results of your abstract do not match the purpose of exploring different methods because it primarily reports the results found for number of days with pain. In my opinion the comments part of the study were very interesting and probably most relevant in many cases. Perhaps the authors should consider focusing the study on the analysis and statistics; guiding the readers why they would choose one stats over the other and use number of days with pain mainly as an example.

Following the same argument, I think that the introduction of the study is primarily focusing on the appropriateness of using SMS for data collection and how diaries may not be as good. However, the methods presented on the study, can be used to analyze data collected using both methods. Therefore, because the focus of the study is not to discuss SMS, the authors should consider focusing the introduction on statistical methods.

Minor Minor Essential Revisions:

1- “Throughout this commentary, we will use “previous duration” as an example baseline characteristic. I suggest changing this to: Throughout this commentary, we will use “previous duration” as the baseline characteristic of interest.

2- As part of your methods, I was curious about: What were the instructions given to the patients at the beginning of the study regarding text message? What did the message say, word by word? If measures were collected once a week, how did patients record days of pain? Did that include recall as well?

3- Which statistical software(s) was/were used in this study?

4- You have mentioned on your methods that log and square root transformations were used. However, there were not descriptions of this use during the study. When did you use this?

5- Throughout the study the authors mention high compliers. However, there is
no description of who is considered high compliers on the methods section. Despite of that, perhaps the authors should consider removing all of the analysis of compliers and non-compliers from the study as in my opinion this classification does not add to the main purpose of the study to look at different analyzes.

6- B: What is the average number of pain days? - I think that the “per week” should be added to the question to clarify the time frame evaluated. Also, the results (numbers) are better read if per week is added after the numbers.

8- It is not clear to me why you choose to “control” or separate groups based on chronicity on some analysis but not others. For example you use it for question 1.b but not for 1.a.

9- Questions 2.b: The proportions of patients that recovered were compared to the proportion of those that did not recover. How did you calculate OR and CI? I think the readers would like to know. The same for risk ratio. Also, you mention NNT but don’t explain or show the results.

10- I think that the authors should consider increasing the discussion on why someone would choose one methods over another and get more in depth about specific methods. For instance I think that the explanation of Survival analysis and cox regression were very superficial.

11-“ Throughout, regardless assumptions of hazards, data (continuous) count and level of compliance, the group with short previous duration of LBP had significantly higher “ risks” (chance) of recovery. This suggests that for our model data set, the methods are robust.” I did not understand how the authors came to the conclusion stated on the last phrase.

12- I think that a lot of times throughout the manuscript the author assumed knowledge of the reader. For example, dendogram of cluster analysis. I think this should be explained clearer so readers can understand the analysis.

13- Methods: Please add standard deviation to mean age.

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