Reviewer’s report

Title: A Feasibility Study of Short Message Service Text Messaging as a Surveillance Tool for Alcohol Consumption and Vehicle for Interventions in University Students

Version: 1 Date: 5 March 2013

Reviewer: Janette - Baird

Reviewer’s report:

Major Compulsory revisions:

1. There have been other studies that gathered alcohol data using SMS text messaging, for example. See: Suffoletto et al. Text-Message-Based Assessments and Brief Intervention for Young Adults Discharged from the Emergency Department Alcoholism: Clinical and Experimental Research, 2012 36 (3). Suggest this is read and added

2. Provide some information about the FAST and information on the validity of this instrument. Also provide psychometric data on the AUDIT to justify why it was used. What was measured and when. There is an online survey to be completed bi-monthly? What was on that survey? Was the AUDIT for example always administered, this would be odd if it was. For how long did the participants receive the SMS text question about consumption? On page 10 the sentence starting 1 unit = ..........to quit, prize info” makes no sense.

3. What were the eligibility criteria for study 1 inclusion? Was ability to speak and understand English an eligibility criterion or was the study offered in other languages? Were only freshmen included?

4. Qualitative study (3): How were participants recruited into this study? Were they called? Sent a SMS text? If so how was sampling continued to saturation? How homogeneous was this sub sample?

5. Intervention study. What theoretical model was used in designing this intervention? For example is the intervention, which seems very brief, based on the Health Beliefs Model, or it could be that normative feedback was being used to increase motivation to change alcohol use. The way it is currently described gives no justification as to why this one SMS message should be considered an intervention.

6. Results: Study 1: Since the FAST is not well described I have no way of knowing what a mean score of 3.96 is telling me about this sample. This is such a low participation rate, 82/248 = 33%, were there any differences between those who did and did not participate, apart from FAST what about gender or age? There are only 28 participants who completed all surveys = 34% this really affects the interpretation of the results and the generalizability of the findings.
Also says that perhaps this is not a good way to keep participants in the study. How many total daily messages were sent out during study 1? Figure 1; the conclusions at the bottom of page 16 suggests that two pieces of information is in this figure, response to the online survey and the response to the SMS messages, it is only the latter that can be found in Figure 1. Participants were sent, I think, a total of 175 messages (7 *25 weeks), if the average number of responses were 86.25 (the SD is not given) then this is about a 50% response rate, or about 3.5 messages a week, so why does the graph show a constant 5-6 messages a week after week 5?

7. Page 17 results: Should the reference for the average drinks consumed and days when consumed not be referenced to Figure 2? In paragraph 1 page 17 Figure 1 is referenced. If the items of the FAST were given along with how these were scored then the interpretation of the regression analyses would be easier. For the validation, I take it that the average drinks consumed and days consumed were the DVs? If so, what FAST score is predicting these DVs? Is it the baseline or the subsequent ones? This is important given the dwindling number of participants responding to the online surveys. So how was missing data handled in these analysis, and what about dependency in the data collected, there will be dependency in all of these repeated measures, so how was this handled in the multiple regression models?

8. Study 2 results: There was 70/82 participants who gave multiple responses to the SMS texts, this is a good response rate although the range is considerable. Please report the inter-quartile range as this is a more sensitive indicator of the dispersion in the data and helps to show if there were any outliers in the data accounting for the mean number of responses. The information on the association between response rate and reports of daily alcohol consumption is interesting, and does suggest perhaps that those who were using increased amounts of alcohol did not respond to the SMS texts. Interesting data on the variation in drinking over days of the week, was that pattern consistent across gender, was gender a covariate in the Poisson regression analysis (page 20)?

9. I very much liked the inclusion of the figures in this manuscript, and I thought that figure 4 was very informative. Although there is visibly a peak of drinking over the Christmas/New year holiday period, does the ‘trough’ in January return the participants to the pre-Christmas level or is the slope significantly different? This is quite an astounding finding that participants drank 70% more during this holiday period. Again I would have liked to have read if this pattern of festive drinking was the same for males and females.

10. Discussion: Good opening paragraph about study retention issues, however there is no discussion of how this limits the generalizability of the results. This should be added either here or in a limitations section. In paragraph 2, perhaps the association between the amount of alcohol consumed and the FAST scores is related to what the FAST measures in comparison to the AUDIT. The AUDIT measures consumption (not only at high levels) as well as negative consequences, FAST measures only hazardous drinking. You can have an AUDIT score that does not indicate hazardous drinking, this does not seem
possible with the FAST, we would expect that those who drink the most should have higher FAST scores.

11. Second paragraph on page 28, I am not sure what points the authors are making here. The sentence starting ‘If this delay is also associated with more salient behaviors”, what salient behaviors are the authors referring to and why would these be associated with course work? I thought the authors had started this paragraph by interpreting the finding of why quantity of alcohol consumed was associated with a delay in next day respond to SMS messages? This was quite interesting, and may even have led to suggestions for finding out what caused this (e.g. hangover) and put forward a future study design of targeting such individuals for an intervention to reduce this behavior. But I got a bit lost on what the point of the sentence I mentioned above was about.

Study3 results: Very interesting data presented on interviewed participants views on multiple aspects of the SMS texts and enquiries about their drinking. This is very well presented.

Minor revisions:

1. Study 4 results: I am not sure of this journals format for Table presentation, but the authors should refer to APA publication guidelines for a neater table presentation format. A null result is a null result and I am not sure that breaking these results up to groups that may not be comparable is overly helpful e.g. control student’s versus intervention non-students; this is not an intuitive comparison nor is there an a priori or even post priori justification for doing so, especially as we have no information on these participants, it could be gender or age that accounts for tense differences rather than intervention or no intervention. Spelling error in last line (ine ach).

2. The next two pages do discuss how the data on the variability in student heavy drinking could be used to select times when an intervention may be appropriate, this is a good discussion. The authors may also want to comment on what other data they did not gather that would have been helpful and could be gathered in a future study, e.g. specific negative consequences that happen at these times of heavy drinking e.g. violence, motor vehicle crashes, arrests, sexual risk taking, poor college performance. Good points about why to avoid early morning SMS messages.

3. Page 31 second paragraph. I am yet to be convinced that the brief message sent about how much money had been spent on alcohol can be considered a ‘nudge’ intervention. Again I ask, why was that message selected, what theoretical basis was that’s election made on, was this the only message that was considered as an intervention?

4. Conclusions page 32, see article from reference I gave (Suffoletto et al 2012, their assessments were certainly targeted to reflect peak drinking times. I do get the point about addressing money if that’s an issue for students who drink, but it does not preclude other issues also being present for students when they drink
as I have said previously. Some of those patients in the ED will be students who have been drinking and have been injured.

5. Page 32-33. What is this relationship between mobile phone use and health-related behaviors, what kind of behaviors and do they get better/worse with mobile use? This seems an odd addition unless this piece of information is related to SMS messaging.

6. Missing a limitations section or at least limitations built into the discussion and conclusion especially around retention, possible selection bias from this and limits of reach of conclusion.

General comments

Study3 results: Very interesting data presented on interviewed participants views on multiple aspects of the SMS texts and enquiries about their drinking. This is very well presented.

Overall this is a good paper; keeping four studies in one’s head as one goes through the paper can be quite confusing. They are not stand alone studies so I am not sure if it would make sense to combine study 1-3 as one study with three separate specific aims, but I will leave that up to the authors to decide. I would recommend accepting this paper if the concerns/revisions I have stated are addressed.

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'