**Reviewer’s report**

**Title:** Exploring the Determinants of Suicide: Conventional and Emergent Risk (DISCOVER): A feasibility study

**Version:** 1  **Date:** 4 February 2015

**Reviewer:** H Bickley

**Reviewer’s report:**

Review of Pilot and Feasibility Studies manuscript. (HB_04/02/2015)

Major Compulsory Revisions: There are no major compulsory revisions.

Minor Essential Revisions: See below.

Discretionary Revisions: See below.

Accept after minor essential revisions.

**Level of interest:** An article whose findings are important to those with closely related research interests.

**Quality of language is acceptable.**

**Quality of figures is acceptable.**

**Statistical review:** A statistician does need to assess the statistics because I do not feel adequately qualified to do this.

**Declaration of competing interests:** I declare that I have no competing interests in relation to this paper.

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**Summary:**

The authors provide a considered summary of the advantages and disadvantages of alternate study designs. The case-control nature of this study is the gold-standard favoured by epidemiologists. This study has a particularly efficient design because it has two control groups.

The study group’s ability to recruit more than their intended sample sizes, in both cases and controls, and in the proportion providing blood and urine samples is encouraging and bodes well for recruitment success of the larger, future study. I am heartened that participants have been so keen to help in this study, and they are commended for this.

Also, given that this study is physically invasive due to blood and urine samples being taken from patients, on top of the psychological impact of answering questions, a pilot of such studies, ironing out any methodological or practical difficulties is beneficial to the wellbeing of the increased number of patients due to take part in the larger second study planned following this pilot study.
This is a successful pilot/feasibility study because the authors have made appropriate amendments to the study design before embarking on their larger study. This sample size is large enough to make decisions on methodology but not onerously so.

It would be useful to publish what the authors have learnt about doing such a study because if people in other geographical areas wish to repeat the study they can do with these lessons in mind.

Generalizability of results: This study was done in a mid-size Canadian city. Obviously the cases are a specific subgroup of the psychiatric population, who have been an inpatient for an extended period, and these are people who have not (yet) died by suicide. The generalizability of methods and findings should bear in mind these facts.

Overall, I would say this was a professionally planned and well-executed study, with valuable results, particularly in terms of learning/improving methodologies which can be directly implemented in the next stage of their study. Most of my comments seek only a little more clarification on definitions and methods.

I wish the authors well with their larger study and await their results with interest.

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Minor Essential Revisions:

Qu1: Title: Given that the study data is of episodes of suicide attempts which did not directly result in death and it does not include data on completed suicides, I would suggest changing the title from ‘Exploring the Determinants of Suicide …’, to ‘Exploring the Determinants of Suicidal Behaviour …’.

Qu2: Cases were inpatients with a recent suicide attempt. Suicide and self-harm literature differentiates risk factors between completed suicides, parasuicides, attempted suicides, non-suicidal self-injury and self-harm. In the second paragraph of the Background section ‘suicidal behaviour’ is defined as behaviour where the person did not die but had intended to. However, in the Results section, paragraph two, the cases are defined as those who had made a serious suicide attempt. However, this ‘serious’ qualifier was not mentioned in the Methods section. Could the authors provide their definition of a ‘serious’ suicide attempt?

Qu3: Using this definition, how did the researchers code and make case determination decisions where the patient said they were ambivalent about dying, or were not sure at the time of the act whether they actually wanted to die or not? I work with UK self-harm data, and this occurs in quite a high proportion of cases. Could the authors clarify that they excluded people who self-harm, but whose intent was not to die by suicide?

Discretionary Revisions:

Qu4: Background: As the authors state, many studies have published on
conventional risk factors associated with suicidal behaviour. They also say, Background section, paragraph 3, “however, novel risk factors are less investigated”. Is this phrase meaningful? Are they not called novel because they are less investigated/evidenced? I would consider changing the word ‘novel’ to ‘other’ in this sentence.

Qu5: Background section, paragraph 3, “Understanding both the inherent and modifiable risk factors of SB will assist in the prevention of SB and therefore completed suicide as well”. Does this not contradict their earlier statement in this paragraph that “SB is not a spectrum of severity phenomenon with suicide ideas… but likely to be better characterized as discrete categories with different risk factors for each category”?

Method/Statistics

Qu6: Were any service users/patients consulted in the design of the pilot study? If so, could the authors mention this in the paper. Also, how did the patients provide feedback during/after the pilot study? Was this verbally/in writing/face-to-face/anonymously etc?

Qu7: How did the research team know which patients did not have past suicide attempts? Had they approached medical staff and asked them to identify appropriate candidates, or was there a medical database they utilized?

Qu8: Control group 2 is a sample of patients from a general medical outpatient/community sample. Could the authors clarify in the paper whether individuals in this group were screened to exclude those with previous mental health issues or who had made previous suicide attempts?

Qu9: It looks like the comparison statistics in Table 1 measures statistically significant differences between all 3 groups at once (though I could have misunderstood). Could additional statistics highlight where eg statistical differences exist between 2 of the groups but not the third?

Qu10: Ethical issues: The paper states that the study was passed by two research ethics boards but maybe a little more detail could be written on this about what needed to be considered. Eg Were the patients told they could choose to leave the study at any point? Were interviews stopped if the patient became distressed? Was there a time-frame for disposal of blood and urine samples and were there any other ethical issues around the collection of blood and urine samples?

Results

Qu11: There are quite a few variables which the authors collected data on, but did not show the results of, eg psychopathology/psychiatric diagnoses, previous suicidal behaviour, social support, impulsivity, current medication, ethnicity, religion. Is this due to low numbers and therefore insufficient statistical power or potential identifiability of cases/controls, or were the results non-significant, or perhaps there are there other reasons?
Qu12: In Figure 2, who are the ‘other’ excluded category?

Qu13: Exclusion criteria include ‘inability to provide informed consent’. Does this automatically exclude those with a formal admission to a psychiatric ward (this is what UK patients are termed as if they have been admitted to a psychiatric ward against their wishes) so that only informal admission patients (ie where the patient agreed to be admitted) would be approached for informed consent? This may have repercussions over the generalizability of findings, because it may exclude the more severely ill patients.

Qu14: Do the researchers have any follow-up data on whether any study patients engaged in suicidal behaviour after the interview period?

Qu15: Who were the 34 individuals who had a past history of suicide attempts but who were not included in the pilot study data analyses? Were these people who were thought to qualify to be in the case group or control groups but who were disqualified from being in one of the groups at a later stage?

Discussion

Qu16: Care must be taken when looking for associations between biological markers/genetics and behaviour. Even if there is a predisposition, it does not make it inevitable. Whilst there may be biomarker influences on psychopathology, this does not necessarily mean the biomarkers are direct influences on a person’s likelihood to try to kill themselves. Association does not necessarily mean causality.

What are we supposed to do with the knowledge that specific genes are associated with a higher likelihood of suicidal behaviour? Are we supposed to test psychiatric patients for presence of such genes? Is it good for a person to know this about themselves, especially if they may get into the mindset of inevitability. Would health insurance companies start testing for such genes? Would it make some couples think twice before having children together if they are both carriers of the gene(s)?

Is it any advantage to know that a person may not have a higher genetic predisposition to suicide, if they do have other modifiable risk factors? Would it make them less likely to try and change their lives, as they think they won’t feel suicidal without the genetic predisposition? Conversely, would someone labelled as having a predisposition to suicidal behaviour feel less inclined to make modifications to factors they can change because they feel they are in a higher risk group anyway?

Also, it is very difficult to separate out the nature/nurture debate, if most people are brought up by biological family members.

Qu17: What were the reasons for behind the 10% who did not provide blood/urine samples? Were these people who had not fasted, or who could not attend on a particular day?

Qu18: Presumably, the point of identifying associations between suicidal
behaviour, exercise and diet is to encourage patients to modify their behaviour. So, could getting patients to exercise more and eat more vegetables and nuts make people less likely to engage in suicidal behaviours? Maybe the authors could add in a little detail on what biological processes link diet, exercise and improved psychopathology.

Qu19: One of the surprising results (for me) is the high percentage (24%) of the community sample (control group two) which had a family history of suicidal behaviour. The fact that 24% of second control group had a family history of suicidal behaviour proves to show just how far reaching this issue is, and the number of people potentially affected by other people’s suicidal behaviour. Did any of their results surprise the authors?

Qu20: Future directions: Is the larger study occurring in the same geographical location as the pilot, but with later years and larger sample sizes?

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests:

I declare that I have no competing interests.