Author's response to reviews

Title: A Mobile Phone Application for the Assessment and Management of Youth Mental Health Problems in Primary Care: A Randomised Controlled Trial

Authors:

Sophie C Reid (sophie.reid@mcri.edu.au)
Sylvia D Kauer (sylvia.kauer@mcri.edu.au)
Stephen J C Hearps (Stephen.hearps@mcri.edu.au)
Alexander H D Crooke (Alexander.crooke@mcri.edu.au)
Angela S Khor (angela.khor@mcri.edu.au)
Lena A Sanci (l.sanci@unimelb.edu.au)
George C Patton (George.patton@rch.org.au)

Version: 4 Date: 27 October 2011

Author's response to reviews:

Dear Dr Penfold,

Re: A Mobile Phone Application for the Assessment and Management of Youth Mental Health Problems in Primary Care: A Randomised Controlled Trial

Thank you for your comments and recommendation regarding the above paper. On behalf of the lead author, Dr Sophie Reid (currently on maternity leave), I have amended the manuscript in line with the reviewers’ comments and I hope these are acceptable to you. Please find the attached manuscript with amendments. I have included the reviewers’ comments and my responses to each below.

I look forward to hearing from you soon. Please do not hesitate to contact me regarding further enquires or amendments to be made.

Yours sincerely,

Sylvia Kauer,
On behalf of Dr Sophie Reid

Reviewer: K. Kelleher

(Major) Several changes would strengthen the manuscript. First, the introduction focuses on screening and underrecognition. However, this intervention is only targeted for those who are identified and the discussion contains nothing about screening and early intervention. The intro should be re worked to focus on the stronger aspects of the software which are related to doctor patient communication and activation of adolescent patients.

This paper is the primary outcomes paper to determine the effects of self-monitoring on mental health outcomes and as such, the introduction has
been reworked to reflect this aim. Further papers will assess the mediating effects of emotional self-awareness on mental health (Kauer et al., in press) and doctor/patient interactions (Reid et al., submitted). Much of the introduction that focused on screening and recognition of symptomology has been changed to talk about using self-monitoring to decrease mental health symptomology. The main change is on page 5 which now reads “Short duration self-monitoring programs involving the completion of homework diaries have had some success at reducing depressive symptoms [16] and can be run on mobile phones [17, 18]. Mobile phones provide a unique avenue for early intervention of mental health problems as they are a ubiquitous accessory, with 100% market penetration in Australia and Britain, and 67% worldwide[19]. Involving technology, such as computers, the internet or mobile phones, in mental health programs can engage and foster young people’s involvement [20-22]. Daily monitoring of mental health symptoms across time (i.e. between appointments) via mobile phones may assist young people in reducing their symptoms of mental health problems before reaching clinically diagnosable disorders.”

(Major essential)Secondly, the authors spend too little time comparing how representative their clinicians and patients are, even though at the end they acknowledge they do not have some of the data. Still, there are ways to find out which clinicians participated by way of size of practice, location and other features. Similarly, knowing how these patients compare to others would be important.

One of our interests was in researching more about rural areas and as such, the number of clinics in rural areas was overrepresented. Page 15, in the results section has been changed to read “These contributing GPs were from 26 different practices in the three recruitment areas: 12 in greater Melbourne, 7 in Albury/Wodonga and 7 in the Goulburn Valley, resulting in an overrepresentation of general practices recruited in rural areas; 75% of Australian general practices are located in capital cities and suburbs [47]. Only 0.1% of Victorians live in remote areas and therefore were not targeted in this study [48].” A section in the discussion was also added to compare the representativeness of our sample in comparison to the population on page 28 reading “This RCT was conducted with a view of representing a wide variety of young people who visit GPs with a range of medical and psychological problems and severity of problems. Therefore the results of this study are applicable to this age group in general. Nevertheless, compared to data from the Australian Bureau of Statistics, the rural sample in this study is overrepresented, with 53.8% of general practices located in rural Victoria compared to 24% of general practices located in rural Victoria in the population [47]. In addition, there was an overrepresentation of female patients with 80.4% female patients recruited in the current sample compared to 53% of females that seek treatment in general health care practices.”

Also, because few effects were identified, the many charts could be eliminated and tables and text would suffice. Most importantly for sampling, the authors are underpowered to detect effects in a conservative design and likely understate the effects of the intervention. this is a potentially damaging statement about the
technology and communication enhancements between teens and docs. do the authors have any qualitative data to inform this issue?

Although there were no differences between groups, we feel that the charts in the results section clearly demonstrate that there was an overall effect over time, showing that regardless of which program was used, mobile phone self-monitoring may reduce mental health symptoms. I have included the charts in this revised draft, however, if you feel they don’t add anything to the paper, we can easily eliminate them. As per the reviewer’s suggestions we have highlighted that the program may have had more of an effect than we could detect on page 29: “the pre-test pathways to care implemented at baseline by GPs may also have occurred for a treatment as usual group and may have decreased mental health symptoms in both groups, thereby reducing the power needed to detect a significant difference between the groups. A larger sample size, or a wait-list control group, would be needed to determine if there was a difference in depressive symptoms between groups [57, 58].”

In addition, we believe that technology is a critical avenue of support for young people in clinical settings and want to highlight the importance of including technology in clinical settings. To this end, we have added the following sentence to page 30: “The current mobiletype study included many aspects of two large successful primary care RCT mental health interventions [61, 62], for example, screening, clinician education, patient-specific reminders for appointments and patient care by the research team, and showed an overall mental health benefit for the sample as a whole and demonstrated that technology, particularly mobile phones, can be used in clinical settings and may provide GPs and young people with an avenue for combating the early symptoms of mental health problems before a clinically diagnosable disorder. Whilst this study does not demonstrate any additional benefits to monitoring specific mood, stress, coping, alcohol and cannabis use and general health factors compared to monitoring general health factors alone, further research using this methodology with larger sample sizes and a waitlist control seem warranted.”

(Minor essential): Two other questions seem important to clarify. First, it is not clear if parental consent was sought for non emancipated youths.

Informed written consent was obtained from participants and to maintain the young person’s confidentiality, only obtained from parents if present at the clinic with their son/daughter. The governing Royal Children’s Hospital Human Research Ethics Committee approved this procedure. In General Practice, young people aged between 14-18 years can attend treatment services without informing their parents and fully consent to treatment without parental approval if they are considered to be a mature minor. The GPs in this study were familiar with these guidelines and able to ascertain that all participants under the age of 18 were mature minors and capable of consenting. Securing parental consent would often be a breach of confidentiality, exclude most of the potential participants, and compromise the validity of the study. Therefore, following previous research with the approval of the RCH HREC, parental consent was not be sought from those aged 14-18 years who were deemed to be mature minors.
by their treating and therefore fully capable of understanding and giving consent unless a parent is present at the clinic with their son/daughter.

The following sentence has been added to page 12 “To protect doctor-patient confidentiality, parental consent was only sought when parents were present during the GP consultations; this process was approved by the Royal Children’s Hospital Human Research Ethics Committee. “

Secondly, it is not clear if the mobiletype responses for the CONTROL youths were shared with the clinicians, even though they did not have depression, drug use, etc.

This is clarified in the Summary Reports paragraph, on page 10: “An individualised summary report of the data was written following structured prescriptive guidelines by the first author (registered psychologist), or the second author under the supervision of the first author and consisted of mood, stress and coping, maintaining well-being and useful resources and recommendations for the intervention group. The comparison group also received individualized summary reports consisting of maintaining well-being (about their sleep, daily activities, diet and exercise) and useful resources and recommendations.”

Reviewer: K. Hacker

This article on the impact of a mobile phone intervention on the mental health of adolescents seen in primary care is well written and quite complete. I only have a few suggestions that would be considered minor essential revisions. 1) please describe the safety plan for adolescents who were enrolled and began to display more concerning mental health behaviors during the interventions. This was not included in your excellent description of the intervention and the methods. You do mention that there were regular reports but not how frequently the GP reviewed them during the trial and what they would do if the reports suggested increased ESA issues.

The mobiletype program contains a high-risk alert that alerts an on call psychologist/phone counsellor if the participant indicates that they are at risk of self-harm. A sentence has been added to page 8: “Participants who indicated that they were at risk of self-harm or suicide activated the program’s high-risk alert, which would automatically send an SMS to our on call psychologist / phone counsellor. The psychologist would then call the young person and assess the risk of self-harm and alert the CAT team in the participant’s area if necessary.”

2) I would like to see additional information in the discussion section on why you believe that the changes in ESA were not seen until the 6 week post rather than at the immediate post intervention period. I wondered why this would be the case that those in the intervention group would decrease (increase?) more than the comparison group particularly since you describe the actions of the GPS for both groups. Overall, it appears that the comparison group had a lesser severity of mental health symptoms to begin with but why the lag time for impact? Please add something that describes whether you believe that this intervention might have better implications for teaching and learning that stays with an adolescent
longer and how adolescent development might play into this.

The results indicate that although not significant, ESA increased from pre- to post-test and continued to increase to the 6-week post-test, where a significant effect was found. A secondary outcomes paper explores ESA and depressive symptoms in further detail, however, we have included the following sentence on page 27 “The intervention group had an increase of ESA over time with a significant effect of the mobiletype program on ESA between pre- and 6-week post-test when compared to the attention comparison group. Results suggest that the self-monitoring intervention program increase young people’s ESA during self-monitoring, between pre- and post-test, but this effect was not significant until 6 weeks after completion of the program. The decrease in mental health symptoms 6 weeks after the program may be explained by the effects of young people having an increased awareness of their emotions. A secondary outcomes paper explores the mediating effect of ESA on depressive symptoms and the implications [51].”

The results suggest that self-monitoring mood, stress and coping strategies significantly increases ESA more than self-monitoring daily activities, exercise and diet. A sentence has been added to highlight the active component in the intervention program on page 28 “The results of this trial suggest that a self-monitoring program which monitors young people’s mood, stress and coping can increase young people’s awareness of their emotions more than a program than only monitors general health factors. Self-monitoring may assist young people to become aware of emotions and stressors and therefore prepare themselves for more adaptive coping strategies.”