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Research report

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## Six-months outcomes of a randomised trial of supportive text messaging for depression and comorbid alcohol use disorder



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#### ABSTRACT

Background and objectives: We have previously reported that supportive text messages delivered twice daily for three months have the potential to provide personalised support for patients with depression and co-morbid Alcohol Use Disorder (AUD). In this study we report the six months outcomes. *Methods:* Participants (n=54) with a DSM IV diagnosis of unipolar depression and AUD who completed an in-patient dual diagnosis treatment programme were randomised to receive daily twice supportive text messages (n=26) or a fortnightly thank you text message (n=28) for three months. Primary outcome measures at six months were Beck's Depression Inventory (BDI-II) scores and Cumulative Abstinence Duration (CAD). Trial registration: NCT0137868.

*Results*: Unlike at three months, there was no statistically significant difference in six months BDI-II scores between the intervention (n=24) and control (n=24) groups; 13.28 (SD=8.7) vs. 15.08 (SD=11.37) respectively after adjusting for the baseline scores, F(1, 45)=0.192, p=0.66. There was also no significant difference in CAD between the text message group and the control group: 84.14 days (9.20) vs. 74.73 days (28.97), t=1.422, df=41, p=0.16. However, patients in the intervention group had significantly higher days to first drink compared to those in the control group: 119.9 (47.7) vs. 62.4 (44.9), t=2.99, df=22, p=0.01.

*Limitations:* Limitations of the study include the small sample size and the potential for loss of rater blinding.

*Conclusion:* The effects of supportive text message intervention were not sustained beyond the period that the patients were receiving the intervention.

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#### 1. Introduction

There is growing interest in using mobile phone text messages as an intervention to improve health related outcomes (Agyapong et al., 2011). For example, recent studies have demonstrated the potential for using the technology to provide additional support for patients with Depression and comorbid Alcohol Use Disorder (AUD) (Agyapong et al., 2012) as well as for young adults presenting to Emergency Departments with AUD (Suffoletto et al., 2011).

Despite the large body literature in favour of using text message interventions to improve several health related outcomes, including supporting smoking cessation (Whittaker et al., 2009; Free et al., 2011), reducing cannabis consumption (Laursen, 2010), reminding patients of scheduled appointments (Downer et al. 2005; Leong et al., 2007; Chen et al., 2008; Geraghty et al., 2008; Koshy et al., 2008; Liew et al., 2009; da Costa et al., 2010) and improving compliance with medication (Pal, 2003; Armstrong et al., 2009; Ollivier et al., 2009; Depp et al., 2010; Strandbygaard et al., 2010), there is a scarcity of literature on any sustained effects following cessation of the text message intervention. In a systematic review of studies using text messages to support smoking cessation (Whittaker et al., 2009; Free et al., 2011), when data from internet and mobile phone programmes were pooled and analysed, statistically significant increases were found in both short and long-term self-reported quitting rates (RR 2.03, 95% CI 1.40 to 2.94).

We have previously shown that daily twice supportive text messaging added to standard care over a three months period has the potential to help people with depression and co-morbid AUD to significantly improve their levels of depression and global functioning at the end of the treatment period, compared to patients receiving only standard care. In the same study, we also showed that there are trends towards increased Cumulative Abstinence Duration (CAD) and lower units of alcohol per drinking day in patients receiving supportive text messages at three months

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(Agyapong et al., 2012). In this paper we report on the 6-months outcomes.

#### 2. Methods

The study methods including details of institutions review board approval, study setting, study design, inclusion and exclusion criteria, randomisation and masking, procedures and interventions have been previously reported in detail in a relate publication for the three months outcomes (Agyapong et al., 2012). This paper should be read in conjunction with this related publication.

In summary, patients who fulfilled the criteria for both Major Depressive Disorder and Alcohol Dependency Syndrome/Alcohol Abuse according to the Structured Clinical Interview for DSM-IV Axis I Disorders (SCID; First et al., 1996) and were discharged from the in-patient dual diagnosis treatment programme in St. Patrick's University Hospital (Farren and Mc Elroy, 2008) were randomised to receive either twice daily supportive text messages for three months or a text messages once fortnightly thanking them for participating in the study. Patients in the two groups were not precluded from participating in any other follow-up programme.

#### 3. Patient flow

One hundred and twenty patients were assessed for eligibility to enter the trial of which 54 eligible patients were randomised (Fig. 1) with 26 participants allocated to the intervention group and 28 to the control group. Overall, 24 patients in the intervention group and 24 in the control group completed the six months assessments. Three patients in the intervention group declined 6-months follow-up while another patient could not be contacted. Two patients in the control group declined 6-months follow up.

#### 4. Interventions

Starting from the day of discharge from in-patient care, patients in the intervention group received twice daily supportive text messages for three months. The messages were sent by a computer programme at 10.00 and 19.00 h each day and were set up and monitored by the research worker who undertook the randomisation. 180 text messages were written by the research team and two addiction counsellors to ensure that the same text message was not sent twice within a 3 months period. They were specifically designed around multiple themes aimed at dealing with stress, maintaining good mental wellbeing, promoting abstinence from alcohol, dealing with cravings, promoting adherence with medication, and providing general support. On any given day, the same text messages were sent to all participants who were in receipt of the intervention such that which text messages were received first by any participant depended on when the participant was recruited.

The messages included the following:

- Develop a support system; isolating yourself can bring on depression.
- Stress cannot be avoided; learn to cope better by adopting new strategies.

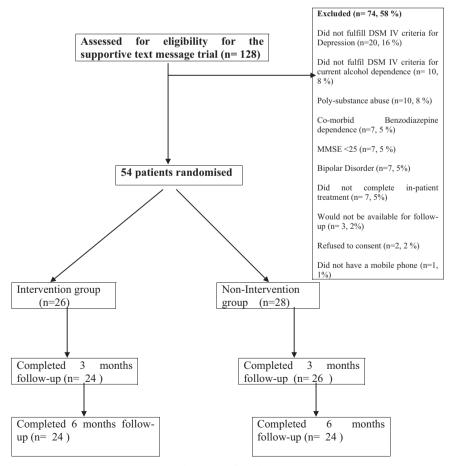


Fig. 1. Study flow chart.

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