'Reach Out, Rise Up': The efficacy of text messaging in an intervention package for anxiety and depression severity in young people

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ABSTRACT

Background: Depression and anxiety are among the most commonly experienced mental health issues faced by young people in Aotearoa, New Zealand. Considerable barriers exist that prevent young people from engaging with face-to-face mental health services. Young people's preference for technology-based counselling mediums such as text messaging opens up new pathways for intervention.
Objective: A pilot text message-based intervention package was trialled for use by young people to evaluate the potential efficacy of the text package as an intervention for depression and anxiety symptoms.
Method: The text package was piloted using a 10-week longitudinal cohort pilot with 21 young participants (12–24 years) who demonstrated mild to moderate anxiety and/or depression symptoms.
Results: Participants' post-package scores were significantly lower than their pre-package scores for both anxiety ($Z = -2.83$, $p = .005$, $r = -0.65$) and depression ($Z = -2.49$, $p = .013$, $r = -.056$). 'Feeling encouraged and supported' increased as a result of receiving support from a trained supporter ($Z = -2.06$, $p = .039$, $r = -0.45$), but not from friends/family ($Z = -1.72$, $p = .130$, $r = -0.37$). Anxiety and depression scores did not change as a result of support from either trained supporters or friends/family.
Conclusions: Findings support the potential efficacy of the text package, justify wider trials of the text package, and support the use of text message-based interventions as potentially effective therapies for young people.

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1. Introduction

Depression and anxiety are among the most commonly experienced mental health issues faced by young people in New Zealand (Oakley Browne, Wells, & Scott, 2006). National survey estimates place recognised lifetime prevalence of anxiety for 16–24 year olds at 24%, and 15% for major depressive disorder, with 50% of adult cases having experienced the onset of a mood disorder before the age of 18 (Oakley Browne et al., 2006). Client data from Youthline—the host community agency who specialises in working with young people—reflects this trend, with anxiety and depression holding the top two positions for clients' reason for entry into face-to-face counselling services (Youthline, 2015). Despite being common experiences for young people (Oakley Browne et al., 2006; Mariu, Merry, Robinson, & Watson, 2012), many do not receive help for symptoms of anxiety and depression. While the under-recognition of mental health symptoms by primary health care providers has been acknowledged (Lowe et al., 2003), many young people do not seek help from health services despite experiencing serious mental health issues (Mariu et al., 2012). Barriers to their

help-seeking include the avoidance and inhibition associated with depression and anxiety (Rapee, Schierring, & Hudson, 2009), hoping that the problem will go away by itself or get better with time, not wanting to make a fuss, being too embarrassed, not having the motivation to seek help, not knowing how to seek help, the cost of healthcare, not having access to transport (Adolescent Health Research Group, 2013), and limited independent access to services. These barriers highlight the need for easily accessible solutions that are youth friendly and can be conveniently accessed through platforms readily utilised by young people, such as mobile phones.

Mobile phones have become an increasingly important way young people experience community and connection, with text messaging providing a particularly low cost and convenient way of staying in touch (Reid & Reid, 2007). Text messaging provides a connected presence for young people despite distances created by space or time (Licoppe, 2004), and offers young people a sense of control, privacy, and anonymity which young people value when they do access help services (Gibson & Cartwright, 2014). Young people's preference for technology-aided counselling media, particularly text messaging, is apparent (King et al., 2006; Gibson & Cartwright, 2014). As such, text messaging presents organisations working with young people with a platform to communicate and offer support to young people on young people's own terms (Gibson & Cartwright, 2014). This also highlights the need for community agencies to adapt to new technologies in

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offering youth-friendly, effective, and appropriate vehicles of support (Evans, 2014).

Given evidence supporting computerised therapies in the self-management of diabetes (Dobson et al., 2015; Franklin, Waller, Pagliari, & Greene, 2006), smoking cessation (Whittaker et al., 2009), weight loss (Patrick et al., 2009), depression and anxiety (Broom, Ladley, Rhyne, & Halloran, 2015; Fleming, 2012; Aguilera & Munoz, 2011; Aguilera & Berridge, 2014), combining text messaging with standardised computerised therapies offers an evidence-based opportunity for community agencies to continue to support young people. However, few studies have evaluated text-messaging as an acceptable and effective intervention for depression or anxiety in young people.

At the same time that young people may value technological media that allow the absence of a counsellor's presence (King et al., 2006; Evans, 2014), a genuine relational connection is important for some young people in counselling services (Gibson & Cartwright, 2014). Interpersonal relationships and therapeutic alliances have been acknowledged to have a strong impact on treatment efficacy, sometimes as much as treatment itself (Watanabe, Hunot, Omori, Churchill, & Furukawa, 2007; Merry et al., 2011; Norcross & Lambert, 2010). Indeed, Mohr and colleagues have suggested that human support may improve the effectiveness of computer-mediated therapies (Mohr, Cuijpers, & Lehman, 2011).

This research tested the potential efficacy of a module-based text package, called 'Reach Out, Rise Up', through a prospective cohort pilot study using a sample of young people. Of particular interest was the testing of the text package as an effective intervention for depression and anxiety symptomology in young people, and whether human support would contribute to positive outcomes.

2. Method

2.1. Participants and procedure

Ethical Review for the study was sought from the New Zealand Northern X Region Ethics Committee prior to study commencement. Young people (12–24 years) who contacted Youthline's Helpline or Support Centre, and who also presented with mild to moderate anxiety and/or depression, were offered the option of signing up for the text package. Young people were also recruited through Youthline's Facebook page and Youth Service (a Youth Worker led service providing practical one-to-one support). Involvement in the study was voluntary and other standard intervention options were offered, i.e. face-to-face and helpline counselling, and mentoring. Information was not collected about participants' interactions with other services. Forty-three young people responded to the recruitment campaign and were screened for anxiety and depression severity, using the General Anxiety Disorder scale (GAD-7) and Patient Health Questionnaire (PHQ-9) respectively. Forty met inclusion criteria (presenting with mild to moderate anxiety and/or depression symptoms (i.e. scores greater than 4 and less than 15) (Spitzer, Kroenke, Williams, & Lowe, 2006; Kroenke & Spritzer, 2002), owning a personal mobile phone, and reporting English literacy) and were included in the study. One was excluded from the study and referred to face-to-face counselling due to responses exceeding moderate severity. Two young people were excluded from the study due to responses indicating below mild severity.

Half of the participants were randomly selected to receive a follow-up phone call each week to support them with the text package. Follow-up phone calls were made to selected participants by a team of trained volunteer helpline counsellors. The helpline counsellors received additional 'Reach Out, Rise Up' training to the traditional Youthline counsellor training to answer questions and offer assistance and motivation. Training included CBT introduction and supporter training, and a supporter manual. The remaining half of the participants received only the text messages.

Two participants explicitly opted out of the text package after commencing: one cited that they no longer needed the text package, and one found the abbreviated text language patronising and was dissatisfied about the volume of weekly text messages. The remaining 38 participants were sent text messages for the full ten weeks of the package. On completion of the text package, participants were rescreened for anxiety and depression symptom severity, and completed an evaluation form. Participants were given the option of returning printed copies or completing evaluations with a trained supporter over the phone. Sixteen participants did not complete the evaluation: seven participants explicitly declined the evaluation, and nine were unable to be contacted. Of these nine, trained supporters had been unable to make contact with two participants over the course of the text package.

Twenty-two of 40 participants completed the full text package, rescreening, and evaluation. However, one participant's data was removed from the analysis due to responding which indicated a change from mild to severe symptomology. Follow-up by a trained supporter revealed that the participant in question experienced additional psychiatric symptoms related to a previously diagnosed personality disorder. In response, the researchers considered the participant's scores inappropriate for the analysis and removed the data. There were no significant differences between those who completed the text package and evaluation, and those who did not. Participant demographic and clinical profiles are shown in Table 1.

Twelve (63%) of the 19 participants who received support from a trained supporter completed the text package and evaluation. Nine (45%) of the 20 participants who did not receive support from a trained supporter, also completed the text package and evaluation. Of the 21 participants who completed the text package and evaluation, 16 (76%) reported having received support from family/friends.

2.2. Text package

The text package comprised three, weekly text messages (a psycho-educational message, a weekly challenge relating to the week's psycho-educational message, and an inspirational message) that were sent to each participant for 10 weeks. Two exceptions were weeks 5 and 10 in which there were no weekly challenges. The rationale for omitting challenges from these weeks was to provide participants with opportunities to reflect on, and practise, the previous weeks' modules. In week 7, there were two aspects to the weekly challenge. The weekly themes and challenges are outlined in Table 2. The texts were scripted to be youth-friendly, and framed with participant choice and empowerment in mind, using encouraging wording (e.g. 'Dont b nervous, its all bout findin ways tht wrk 4 u', 'Dont worry if u havnt done evrythin just

Table 1
Demographic characteristics of text package participants.

	Completed text package and evaluation (n = 21[a])	Did not complete text package and evaluation (n = 18)
Mean age (years)[b]	19.3 (2.8)	18.0 (2.4)
Gender		
Female	14	14
Male	7	4
Ethnicity		
Maori	0	3
Maori/NZ European	1	1
NZ European	16	9
Pacific Island	1	3
Other	3	2
Mean anxiety (GAD-7) score[b]	8.1 (3.2)	9.2 (3.9)
Mean depression (PHQ-9) score[b]	7.8 (3.6)	9.8 (3.0)

[a] Table excludes the data of one participant whose data was removed from the analysis altogether.
[b] Means (followed by standard deviation in parenthesis) are reported for continuous variables.