MoodRush:
Designing a Language-free Mobile App for Mood Self-assessment

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High levels of depression & anxiety found in 27% of university respondents (Bayram & Bilge, 2008)

Year 1 medical students have highest rates of depression at 33.5 (suicide ideation was 5.8%) (Puthran, et al., 2016)

15yr olds in New Zealand have the second-highest rate of bullying out of 51 countries (PISA Report, 2015)
Background

Suicide rates per 100,000 young persons aged 15-24 (WHO Mortality Database, 2011)

<table>
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<th>Country</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
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<td>US</td>
<td>16.1</td>
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Background

- New Zealand has the 2\textsuperscript{nd} highest youth suicide rate of all OECD countries (Ministry of Health, 2016)
- Youth (15-24) (UN, n.d.) affected by socioeconomic deprivation are at higher risk
- High depression & lower usage rates of mental health support
- Increased isolation among international student population

Suicide rates by ethnicity and age group, 2009–2013 (Ministry of Health, 2017)
"Strengthen systems for collecting and sharing evidence and knowledge about suicidal behaviour and for tracking our progress" (Plan 10: MOH, 2017, p.12).

"Implement programmes and strategies to promote positive wellbeing at all life stages, including school-based programmes, online programmes, programmes for young people" (MOH, 2017, p.12)

"developing apps to help people in distress to navigate services" (MOH, 2017, p.18)
• New Zealand: 91% of the 18-34 own a smartphone (Gibson et al., 2013)

• Youth spend a significant amount of time on their devices (The Common Sense Census, 2015).

• Feeling normal & autonomous and being connected, are crucial factors for young people affected by mental health problems (Wisdom, Clarke, & Green, 2006).

• 69% of contacts to telehealth providers originate from < 24yr olds (Coleman, 2017)

• Mobile health interventions have significant positive effect on health outcomes in young populations (Fedele et al., 2017).

• Self-assessment is therapeutically beneficial due to the individual being involved in the process (Beck, 1979).
Typical online mood self-assessment questionnaire

1. How often have you been bothered by feeling down, depressed, irritable, or hopeless over the last two weeks?

   - NOT AT ALL
   - SEVERAL DAYS
   - MORE THAN HALF THE DAYS
   - NEARLY EVERY DAY

Source: depression.org.nz
1. Self-assessment for young people is limited, nevertheless a crucial element for suicide prevention.

2. Monochromatic background (limited in engaging/attractiveness), yet engagement is more predictive of positive outcome (Kim, Wampold, & Bolt, 2006).

3. Lack of clinical reliability, validity & efficacy (Donker et al., 2013; Leigh & Flatt, 2013)

4. Significant language component (i.e. “irritable” and “fidgety”), meaning suitability for youth with limited (health) literacy or speakers of other languages questionable.

5. Information about Mental Health support options such as Psychotherapy, Lifehacker (social media), phone/online and computer-based therapies is not easily locatable.
Design and implement a prototype “mood self-assessment mobile application” based on a validated clinical assessment tool, that is

- language-free &
- more engaging.
Compared to a pen and paper assessment, is a language-free mood self-assessment app (MoodRush) more engaging/attractive, more accessible, valid and reliable in determining mood status for NZ born youth and youth who English is their second language?
A prototype mobile app (MoodRush), containing pictorial versions of the 21 Beck Depression Inventory (BDI-II) assessment tools.

- Android based software.
- Provides overall feedback about user’s responses.
BDI question 15:
Loss of energy (response choice from the top):

• I have as much energy as ever
• I have less energy than I used to have
• I don’t have enough energy to do very much
• I don’t have enough energy to do anything
Prototype design

- MoodRush audience likely from wide range of cultures and backgrounds.

- Design decisions are not based on Western-centric models.

- More inclusive, top to bottom screen design.

- Use of a diverse range of pictorial response choices of cartoons and animals ensuring that not one race or ethnicity is highlighted.
MoodRush tracks user engagement and logs the data using Google Analytics.
Pilot study

• Pilot data from 20 Unitec students
  Aim to provide initial estimates of the accessibility, attractiveness and clinical validity of the prototype. Ten domestic/native English speakers & ten international/English as a second language students.

• Types of data: Observation of (overt) behaviour; e.g., user engagement assessed by the number of completed MoodRush items

• Self-report: User Engagement Scale

• Psychological measurement; clinical validity by comparing pilot participants’ scores obtained by completing the prototype self-assessment tool and those obtained by the BDI-II
Timeline

- June 2017: Mātauranga Māori consultation

- July 2017: Symposium

- August 2017: Ethics application (UREC) for pilot data collection

- September 2017: Pilot data from 20 Unitec students

- October to Jan 2018: Draft applications for external research income.

Thanks

To you for your attention.

To the organisers for inviting us and our hosts.

To Strategic Research Fund 2017

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