Assessing acceptability and feasibility of a theory-based digital lifestyle intervention for adults with prediabetes

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Background
- The prevalence of prediabetes is rapidly rising. This is largely associated with an increase in obesity.
- Obese individuals have a 7-fold increased risk of developing Type 2 diabetes, compared to individuals of a healthy weight.
- Current evidence demonstrates that effectively targeting diet and physical activity to initiate weight loss and weight loss maintenance reduces the incidence of diabetes.
- Adults at risk of diabetes have previously been offered face-to-face lifestyle programmes that provide support to make and sustain dietary and physical activity behaviour changes. Face-to-face programmes are often time consuming and offered at inconvenient times. Consequently, there is a clear need for scalable behaviour change interventions.

Research aim

Methods
- A single group pilot study.
- 40 participants with prediabetes, aged 18-75 years with BMI ≥ 25.
- A mixed methods approach will assess acceptability (e.g., adherence, completion, patient views) and feasibility (e.g., recruitment, retention) as primary outcomes.
- Secondary outcome measure data will be collected for diet, physical activity, sleep, metabolic control, body composition, cardiorespiratory fitness & cardiac function at baseline, 3 and 9 months.
- An embedded qualitative study will be conducted to obtain data on feasibility and acceptability.

Recruitment procedure

The participant journey

Results

Table 1. Outcome measures at 3 months (n=15)

<table>
<thead>
<tr>
<th>Outcome measures</th>
<th>Baseline visit</th>
<th>3 month time point</th>
<th>Average absolute change</th>
<th>% change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight (kg)</td>
<td>99.8</td>
<td>94.7</td>
<td>-5.1</td>
<td>-4.9</td>
</tr>
<tr>
<td>Waist (cm)</td>
<td>147</td>
<td>135</td>
<td>-12</td>
<td>-6.9</td>
</tr>
<tr>
<td>Body fat (%)</td>
<td>40.4</td>
<td>39.4</td>
<td>-0.8</td>
<td>-2.5</td>
</tr>
<tr>
<td>VO2 Peak (ml/kg/min)</td>
<td>16.8</td>
<td>17.1</td>
<td>0.2</td>
<td>3.3</td>
</tr>
<tr>
<td>HbA1c (mmol/mol)</td>
<td>43.2</td>
<td>41.1</td>
<td>-1.5</td>
<td>-3.2</td>
</tr>
<tr>
<td>Max WR (watts)</td>
<td>107</td>
<td>129</td>
<td>22</td>
<td>23</td>
</tr>
</tbody>
</table>

Discussions
- Preliminary findings suggest that the digital intervention ‘Changing Health’ is acceptable and feasible for adults with prediabetes.
- Secondary outcome data collected (n=15) has shown positive changes for individuals with prediabetes.
- Qualitative investigation will add important context to barriers and facilitators to acceptability and feasibility.

This pilot study will inform a larger scale evaluation of Changing Health should the digital intervention demonstrate to be both acceptable and feasible.

References