Building the evidence for integrated care for adults with type 2 diabetes: A pilot study

Browne JL, Spieght J, Martin C, Gillffian C.

1. The Australian Centre for Behavioural Research in Diabetes, Diabetes Victoria, Melbourne, VIC, Australia; 2. School of Psychology, Deakin University, Burwood, VIC, Australia; 3. Carrington Health, Box Hill, VIC, Australia; 4. Eastern Health Clinical School, Monash University, Box Hill, VIC, Australia.

Background

- Integrated care models hold promise for reducing fragmentation in the health system and improving diabetes outcomes.
- They coordinate care provided by various health professionals using a person-centred approach.
- The Integrated Diabetes Education and Assessment Service (IDEAS) is one example of such a model.
- IDEAS is an integrated, multidisciplinary, community-based service in Melbourne for adults with type 2 diabetes (T2DM).

Aim

- To assess the psychosocial and biomedical outcomes of adults with T2DM attending IDEAS relative to hospital-based outpatient diabetes clinics.

Method

Study Design & Outcome Measures

- Two studies were conducted:
  - a real-world, 6-month, multi-site pilot randomised controlled trial (RCT) comparing the impact of the IDEAS model relative to usual hospital-based outpatient care.
  - a cross-sectional (CS) study of adults with T2DM attending each service.
- Both studies were undertaken at two IDEAS clinics and two hospital-based outpatient clinics.
- Primary outcome: diabetes distress assessed by Problem Areas In Diabetes (PAID) scale.
- Secondary outcomes:
  - perceived quality of diabetes care assessed by Patient Evaluation of the Quality of Diabetes Care (PEQD).
  - diabetes-specific self-efficacy assessed by Diabetes Empowerment Scale (DES) – Short Form (DES-SF).
  - average blood glucose over past 2 - 3 months (HbA1c).

Participants & Sample Sizes

- Adults with T2DM in Melbourne’s east were eligible if:
  - aged ≥18 years; proficient in English; absence of cognitive impairment/illness/acute serious disease; new referral into system (RCT); attended the service at least twice (CS).
- Sample sizes:
  - RCT study N=56. 48% IDEAS; 52% Hospital.
  - CS study N=92. 64% IDEAS; 36% Hospital.

Data Collection

- RCT:
  - recruited and screened for eligibility over the phone by a diabetes educator.
  - participant met with researcher in waiting room at baseline (Time 1) and six month follow-up (Time 2).
  - time 1: completed psychosocial questionnaire in waiting room; biomedical and clinical outcomes extracted from client records.
  - time 2: As above.
  - CS study:
    - researcher approached potential participant in waiting room.
    - completed psychosocial questionnaire in waiting room prior to clinic appointment.
    - biomedical / clinical outcomes extracted from client records.

Data Analysis

- Independent samples t-tests to compare baseline and demographic characteristics between groups.
- ANCOVAs on Time 2 RCT and CS outcome data.
  - time 1 data (RCT only), age, diabetes duration, primary treatment, number of clinic visits (CS study only) entered as covariates.
- Repeated-measured ANOVAs by group on RCT data for diabetes distress, diabetes-specific self-efficacy, HbA1c.

Results

- Sample characteristics are displayed in Table 1.
- Findings from ANCOVA and repeated-measures ANOVA analyses are presented in Table 2.
- Regarding diabetes distress, there was a non-significant trend in favour of IDEAS in both studies.
- Diabetes-specific self-efficacy did not differ between settings on either study.
- Perceptions of quality of care favoured IDEAS in both studies (p=0.01).
- In the RCT, HbA1c improved significantly overall, but there was no effect of service setting.
- In the cross-sectional study, HbA1c was equivalent between settings.

Table 1. Sample characteristics of RCT participants at baseline (N=56) and cross-sectional study participants (N=92)*

<table>
<thead>
<tr>
<th>RCT (N=56)</th>
<th>CS (N=92)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sample</strong></td>
<td></td>
</tr>
<tr>
<td>IDEAS</td>
<td>27</td>
</tr>
<tr>
<td>Hospital</td>
<td>29</td>
</tr>
</tbody>
</table>

Table 2. Descriptive and test statistics on outcome variables for RCT and CS studies.

<table>
<thead>
<tr>
<th>Outcome</th>
<th>RCT (N=56)</th>
<th>CS (N=92)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>54±14</td>
<td>63±10</td>
</tr>
<tr>
<td>Diabetes distress</td>
<td>8±8</td>
<td>12±9</td>
</tr>
<tr>
<td>Women</td>
<td>10 (37)</td>
<td>28 (58)</td>
</tr>
<tr>
<td>Insulin use</td>
<td>16 (59)</td>
<td>20 (34)</td>
</tr>
<tr>
<td>No. of complications</td>
<td>1.0±1.8</td>
<td>1.9±1.9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Outcome</th>
<th>RCT (N=56)</th>
<th>CS (N=92)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>63±10</td>
<td>63±9</td>
</tr>
<tr>
<td>Diabetes distress</td>
<td>27.18±20.04</td>
<td>22.63±19.43</td>
</tr>
<tr>
<td>Hospital</td>
<td>29.25±23.50</td>
<td>30.38±19.89</td>
</tr>
<tr>
<td>HbA1c (%)</td>
<td>7.95±1.37</td>
<td>7.9±1.37</td>
</tr>
</tbody>
</table>

Conclusions

- This pilot study was the first to evaluate the IDEAS model of T2DM care.
- Differences in diabetes distress and self-efficacy between service settings did not reach statistical significance; however, studies were likely underpowered to detect differences.
- Patients’ evaluations of the quality of diabetes care at IDEAS were very positive, and this is likely to be the key strength of the model.
- Importantly, this positive patient experience was not at the expense of glycaemic outcomes.
- The IDEAS model holds promise for people with T2DM who need more specialist/multidisciplinary care than can be provided in primary care.

References