The DWELL Project: Development and Evaluation of an Innovative Psychoeducational Programme for People with Type 2 Diabetes

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Director, Health and Europe Centre
DWELL Lead organisation
Diabetes and WELLbeing (DWELL) Project

8 Partner Organisations from: UK, Belgium, The Netherlands, France

EU-funded project: more than €1.9 million (£1.6 million) ERDF funding

Developing a cross-border approach to tackling Type 2 Diabetes

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Project Partners

Canterbury Christ Church University

Centre Hospitalier de Douai

artevelde University College Ghent

MCH Medway Community Healthcare

Kent County Council

Kinetic Analysis

The Health and Europe Centre

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DWELL Project Aims

• To change the way people with Type 2 Diabetes are supported
• To improve their health and wellbeing
• To reduce economic costs of type 2 diabetes
• To empower patients to take control of their own lives
• To conduct evaluation of the intervention in 4 areas:
  o Patient Outcomes
  o Staff Training Evaluation
  o Cost Benefits Analysis
  o Process Evaluation
The DWELL Programme is delivering:

• A 12-week support programme for people with Type 2 Diabetes to 1,000 patients across 4 countries
• A training programme for staff to successfully deliver DWELL programme
• New tools to support patients during and post-intervention
• New multi-lingual online support tool for patients
• Comprehensive evaluation of the intervention
The DWELL Programme

Julie Webster
DWELL Programme Lead
Medway Community Health Care (MCH)
DWELL Diabetes and Wellbeing

A holistic 12 week programme

- Physical activity
- Nutrition
- Wellbeing
- Education
- Empowerment
- Individual, tailored support
- Putting patients in the driving seat
- Improving the lives of people with type 2 diabetes
- Motivating them to make long-term lifestyle changes to manage their diabetes successfully
- Dramatically reducing their risk of developing long-term complications
- Peer support

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DWELL 12-week programme

- Nutrition
- Physical activity
- Wellbeing
- Education (using X-PERT as basis)

- peer support
- motivational interviewing
- self-management

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## ‘Pick & mix’ option examples

<table>
<thead>
<tr>
<th>Nutrition</th>
<th>Physical activity</th>
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<tbody>
<tr>
<td>Cooking sessions</td>
<td>Walking group</td>
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<tr>
<td>Shopping trip</td>
<td>Gym access</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Wellbeing</th>
<th>Education</th>
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<tbody>
<tr>
<td>Craft group</td>
<td>Programme referrals</td>
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<tr>
<td>Community choir</td>
<td>Foot care</td>
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<tr>
<td>Music group</td>
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<td>Alternative therapies</td>
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Patient Ambassadors

• Patient Ambassador recruitment criteria:
  o Completion of DWELL programme
  o Competencies
  o Skills

• Roles of Patient Ambassadors:
  o Co-design and piloting of 12-week programme
  o App testing for online support tools
  o Promotion of DWELL programme in community
  o Support of programme and participants
  o Participation in cross-border network meetings
  o Training new staff to deliver programme
  o Sustaining DWELL programme beyond end of project
Ongoing support

- DWELL Website:
  - Information on a range of subjects including apps and support tools
- DWELL Directory of Services (statutory/voluntary):
  - For patients to choose from for their care
- DWELL Community
  - Supported by DWELL Patient Ambassadors

- The ongoing support will continue over the life of the project
Everyone delivering DWELL is assessed against core competencies to identify training needs:

- Understanding the philosophy of the programme (change from medical to holistic approach - ‘The DWELL Approach’)
- Good understanding of diabetes
- Group facilitation skills
- Motivational Interviewing techniques
- Effective use of DWELL Evaluation Tool
DWELL programme delivery in the UK

• Programme will run until March/April 2020

• Delivered in small groups of approx. 8 people

• Morning, afternoon and evening sessions available:
  - At Medway - ourZone (Pattens Lane, Rochester)
  - At Maidstone - Blackthorn Trust (St Andrew’s Road)
Diabetes and Wellbeing – “Life Gets in the Way!”

Kevin Jasper
DWELL Patient Ambassador
Medway Community Health Care (MCH)
• At age 56 (2008) diagnosed with Type 2 diabetes
• GP advised - change your life style completely NOW!

• Stop eating all cakes, sweets, bread, no sweet drinks, no sweets of any kind, no fatty foods, nothing with batter and no fried food, reduce food intake to a minimum. Drink water!

• Prescribed a selection of tablets – Metformin, Simverstatin, Entimizide and Imberstartin

• Weight 130kg

• Non-drinker but love chocolate, sweets... in fact loves all food!
• Transferred to new GP surgery and saw diabetic nurse
• Weight down to 115kg but HbA1c up from 88 to 118
• Prescribed - Levemir 20 units b.d. & Victoza 18 units o.d.
• Some balance in blood results achieved over approx 10 month
• Weight started to fluctuate, gastoparesis diagnosed and glucose became erratic
• Changed to Nova Rapid 20 units b.d and levemir 24 units b.d
• Referred to the Medway Community Diabetes Team
• X-PERT Insulin course for a 6 week period
• Due to another health issue steroids prescribed for a three year period. Weight ballooned to 165kg!

• Steroids treatment was deemed not appropriate therefore reduced and stopped

• Medication changed to Nova30 28 units b.d and Trulicity once per week

• At this time (March 2017) I was introduced to the DWELL Research project and asked if I wanted to take part in the focus groups to start designing and planning the DWELL programme

• My life changed at this point!
I subsequently participated in the DWELL pilot course and was asked to give honest feedback about what needed to stay and what had to go!!

This was both as we went along and at a Week 13 debrief which all the pilot participants attended.

I found that the DWELL programme was the most useful series of meetings I had ever attended, and the advice shared with the group stimulated me into the lifestyle changes I needed to take.
• To put this into context...

• The DWELL course for me

• My HbA1c at the start of the DWELL programme was 109 by the end of the twelve week course the HbA1c was 58

• Weight reduced to 120kg and my Insulin intake dropped to 12 units b.d. and Trulicity once each week which has been maintained
So what caused the changes?

• Spending time with other people who also have diabetes
• Ample time to discuss the information we received especially on how our bodies were functioning with diabetes
• Ideas on menus that helped my wife and I achieve the right portion sizes for our meals and helped us understand how to shop for diabetes
• Setting a weekly target on what extra activities we could do to exercise and make us more active
• The team listened to our issues and supported us in our development
The support continues ...

• The DWELL team are there even after the course to support participants and the DWELL Patient Ambassadors are part of that team.

• DWELL Patient Ambassadors help in different ways in different locations and the contribution from each Ambassador is unique but all of us have received training and support to help us undertake our role.

• I lead a craft group that meets weekly which allows post course participants to have an opportunity to meet up and talk about their week and get support from each other.

• Sometimes we even make things!!
• I have also got involved in road shows and helping to recruit research participants

• Supported new participants and encouraging them which in turn helps me.

• Like other DWELL Patient Ambassadors I have taken part in cross border Ambassador Network events where we share good practice and support each other. This in turn helps me to support other.

• Other Ambassadors have been involved in setting up walking groups, writing newsletters and helping with the website.

• And so the DWELL community grows...
Diabetes Professional Care, 29-30 October 2019, Olympia London

DWELL Evaluation Study

Prof Eleni Hatzidimitriadou
Professor of Community Psychology and Public Mental Health &
Head of Research and Enterprise
Faculty of Health and Wellbeing
Canterbury Christ Church University

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Literature Review

• Self-management programmes can improve patient knowledge, health beliefs, clinical outcomes and support sustained lifestyle changes for people with T2DM

• Compliance or adherence to self-care activities is generally low
  - **Patient barriers**: attitude/beliefs; knowledge; health literacy; locus of control; financial resources; co-morbidities; social support; culture/language capabilities
  - **Practitioners' barriers**: lack of time/resources; attitude/beliefs; knowledge about diabetes; effective communication; lack of training/support

• Effective evaluation of interventions are robust, comprehensive and holistic, and capture key benefits for patients, staff experience and process

• Further work needed to determine how benefits of self-management programs can be sustained

• Paucity of research in areas of staff education and patient involvement in co-design

Key references:
Evaluation Study Design

• Mixed methods approach
• Repeated measures design

Baseline (T0) → End of programme (T1) → 1st Follow up - 6 months post-programme (T2) → 2nd Follow up - 12 months post-programme (T3)

• Pre-post and post-follow up comparisons
• Comparison within and between sites
• Process evaluation of intervention
• Cost effectiveness analysis of patient outcomes
## Recruitment targets

<table>
<thead>
<tr>
<th></th>
<th>PATIENTS</th>
<th>CONTROL</th>
<th>STAFF</th>
<th>PATIENT AMBASSADORS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blackthorn Trust (UK)</td>
<td>180</td>
<td>-*</td>
<td>15</td>
<td>5</td>
</tr>
<tr>
<td>Medway Community Healthcare (UK)</td>
<td>150</td>
<td>100*</td>
<td>15</td>
<td>5</td>
</tr>
<tr>
<td>Douai Hospital (France)</td>
<td>200</td>
<td>40</td>
<td>30</td>
<td>5</td>
</tr>
<tr>
<td>Artevelde (Belgium)</td>
<td>50</td>
<td>10</td>
<td>-</td>
<td>5</td>
</tr>
<tr>
<td>Kinetic Analysis (Netherlands)</td>
<td>200</td>
<td>40</td>
<td>15</td>
<td>5</td>
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<tr>
<td>TOTAL</td>
<td>780</td>
<td>190</td>
<td>100</td>
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*Combined UK control group
## Data Collection

### Quantitative Data
- Collection of physiological measurements: BMI, waist circumference, HbA1c
- Completion of the ‘DWELL Tool’ (compilation of demographic + validated questionnaires) to assess: background, attitudes and behaviours, physical health, self-care, health status
- Participant activities
- Attendance

### Qualitative Data
- End of programme feedback from participants (focus groups)
- Motivational interview techniques
- Goal setting
- Feedback from DWELL partners/facilitators, patient ambassadors
- Monitoring changes in delivery during site visits (researcher field notes)
DWELL UK/FR Sample

UK

- Gender:
  - Male: 37%
  - Female: 63%

- Ethnic Background:
  - White: 85%
  - Black/African/Carribean: 6%
  - Asian: 8%
  - Other: 1%

FRANCE

- Gender:
  - Male: 39%
  - Female: 61%

- Ethnic Background:
  - White: 88%
  - Black/African/Carribean: 6%
  - Mixed Ethnic Background: 6%

**BMI**

- Healthy Weight
- Overweight
- Obesity Class I
- Obesity Class II
- Obesity Class III

**HbA1c**

- < 41
- 41 - 49
- 50 - 55
- 56 - 60
- 61 - 70
- 72+

*Classification according to NICE guidelines*

Results as at 07/10/2019

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Physiological Outcomes

**UK**

- **BMI**
  - Pre Dwell: 30-36
  - Post Dwell: 30-36
  - *p < .001*
  - *n = 90*

- **HbA1c**
  - Pre Dwell: 48-66
  - Post Dwell: 48-66
  - *p < .001*
  - *n = 87*

**FRANCE**

- **BMI**
  - Pre Dwell: 30-36
  - Post Dwell: 30-36
  - *p < .05*
  - *n = 33*

- **HbA1c**
  - Pre Dwell: 48-66
  - Post Dwell: 48-66
  - *p < .05*
  - *n = 33*
Physiological Outcomes

**UK**

- **Weight**
  - Pre DWELL: 90 Kg
  - Post DWELL: 95 Kg
  - Significance: $n = 90$, $p < .001$

- **Waist Circumference**
  - Pre DWELL: 110 Centimetres
  - Post DWELL: 105 Centimetres
  - Significance: $n = 90$, $p < .001$

**FRANCE**

- **Weight**
  - Pre DWELL: 95 Kg
  - Post DWELL: 90 Kg
  - Significance: $n = 33$

- **Waist Circumference**
  - Pre DWELL: 110 Centimetres
  - Post DWELL: 105 Centimetres
  - Significance: $n = 33$
Eating Behaviours

**UK**

- **Restrained Eating – Expected Increase**
  - Pre DWELL vs. Post DWELL, $p < .001$, $n = 70$
  - Dutch Eating Behaviour Scale

- **External and Emotional Eating – Expected Decrease**
  - External Eating: Pre DWELL $n = 73$, Post DWELL $n = 73$
  - Emotional Eating: Pre DWELL $n = 73$, Post DWELL $n = 73$

**FRANCE**

- **Restrained Eating – Expected Increase**
  - Pre DWELL vs. Post DWELL, $n = 33$
  - Dutch Eating Behaviour Scale

- **External and Emotional Eating – Expected Decrease**
  - External Eating: Pre DWELL $n = 73$, Post DWELL $n = 33$
  - Emotional Eating: Pre DWELL $n = 73$, Post DWELL $n = 33$

Results as at 07/10/2019

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Patient Empowerment

**UK**

Diabetes Empowerment Scale
Perceived ability to self-manage diabetes

$p < .001$
$n = 72$

**FRANCE**

Diabetes Empowerment Scale
Perceived ability to self-manage diabetes

$p < .001$
$n = 33$
Illness Perceptions

UK
Illness Perception Questionnaire

Expected Reduction
- Pre DWELL
- Post DWELL

Expected Increase
- Pre DWELL
- Post DWELL

FRANCE
Illness Perception Questionnaire

Expected Reduction
- Pre DWELL
- Post DWELL

Expected Increase
- Pre DWELL
- Post DWELL

Results as at 07/10/2019
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End of Programme
Participant Feedback

MOTIVATION

Better understanding to manage T2DM and health
- Control of blood glucose
- Reduce/stop medication
- Reduce risk of complications
- Reverse diabetes
- Take control of health
- Lack of knowledge/awareness
- Difficulty managing condition
- Denial/avoidance

Negative experiences
- HCPs – lack of time/support
- Stigma/shame linked to T2DM
- Feeling dismissed/chastised
- Feeling of failure
- Fear/shock

Referral routes
- Referral by GP/HCP
- Contact with patient ambassadors
- Encouraged by previous participants
- Read about DWELL (leaflet/social media)

Results as at 10/09/19
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End of Programme Participant Feedback

**Programme content**
- Education element
- Nutrition – hands on/virtual
- Regular goal setting

**Programme set up**
- Group size
- Length of programme
- Venue/environment
- Evening session

**Feeling supported**
- Being part of a group
- Peer support element
- Facilitator style
- Resources
- Holistic approach
- Patient ambassadors
- Motivational interviews
- Goal setting - autonomy
- Uplifting and motivating

**Content of programme**
- Lack of physical activity sessions/opportunities
- Mixed feedback regarding wellbeing sessions
- Education element technical and complex

**FACILITATING FACTORS**

**BARRIERS & SUGGESTED IMPROVEMENTS**

**Operational/logistical barriers**
- Timing of sessions
- Promotion of programme
- More follow-up

Results as at 10/09/19
End of Programme Participant Feedback

PARTICIPANT EXPERIENCES & OUTCOMES

Wellbeing and social outcomes
- Peer support
- Forming friendships
- Prioritising self-care
- Discovering new things
- Educating others

Lifestyle changes and addressing habits
- Realisation that lifestyle changes required
- Nutrition/diet changes
- Increased physical activity
- Increased wellbeing activities
- Continue goal setting

Mental health outcomes
- Empowerment to take control
- New positive perspective
- Confidence
- Resilience
- Less despondency/guilt

Enhanced knowledge leading to better self-management
- Improved knowledge and awareness
- Improved blood glucose
- Decrease in medication
- Weight loss

Results as at 10/09/19

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The DWELL Journey

Weight loss and reduced HbA1c

“I am down one glucoside, down one metformin, and my bloods are just above pre-diabetic. And I’ve lost 17kg (in 15 weeks)”

Enhanced self-management of diabetes

“It has changed my life completely...I have taken control – I am now looking after myself, give myself time and do things for myself, and as a result I am also more able to support others in my life.”

Improved restrained eating

“Up till New Year I was really picking at night-time on my own. Since I’ve been on this course, I haven’t. Once my dinner is gone, that’s it. So that’s a big habit I’ve kicked.”

Reduced external eating

“I can look at the chocolate aisle in the supermarket now and not pick anything up, because I am aware of sugars and I no longer have the craving for it. This is somebody who on a bad day would eat seven Mars Bars one after the other.”

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Thank you!

For further information: www.dwelldiabetes.eu

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