

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

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Diabetes and WELLbeing (DWELL) Project



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

EU-funded project: more than €2.3 million (£1.9 million) ERDF funding

Developing a crossborder approach to tackling Type 2 Diabetes



Project Partners





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:
 - Patient Outcomes
 - Staff Training Evaluation
 - Cost Benefits Analysis
 - Process Evaluation

The DWELL Programme is delivering:



- A 12-week support programme for people with Type
 2 Diabetes to 800 patients across 4 countries
- A training programme for staff to successfully deliver DWELL programme
- New tools to support patients during and postintervention
- Comprehensive evaluation of the intervention



DWELL Final Conference October 2022



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Diabetes Type 2 – Why DWELL Was Needed

Stephen D Cochrane MA, MSc, FFPH, Public Health Specialist, Kent County Council Maarten PE Gijssel MSc, Clinical Health Scientist, Kinetic Analysis, The Netherlands



Interreg Mars Zeeën Diabetes Type 2 – A Public Health Issue DVELLEuropean Regional Development Fund

- Around 90% of people living with diabetes have type 2 diabetes.
- Since 2018 to 2022 type 2 diabetes has placed an increasing strain on national health expenditure
- Gives rise to a wide range of complications CVD, kidney disease and failure, sight loss and diabetic foot disease and amputations.
- These complications account for 80% of the direct costs of type 2 diabetes
- between 1 in 6 to 1 in 4 hospital beds being occupied by people with type 2 diabetes.
- Sources: Diabetes UK/NHS data.





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• People living with diabetes are twice as likely to suffer from depression.

- Diabetes and ethnicity and deprivation.
- You are more at risk if you live in a deprived area. Prevalence of Type 2 diabetes is 60% more common among individuals in the most deprived.(UK)
- The impact of Covid is greater on diabetic patients.
- An ever increasing number of European citizens living with diabetes and other chronic conditions will develop life threatening complications. Millions more on their way to developing the condition.



Sources: Diabetes UK/NHS data.

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Diabetes in Europe

- 1 in 11 adults (61 million) are living with diabetes
- The number of adults living with diabetes is expected to reach 67 million by 2030 and 69 million by 2045.
- Over 1 in 3 (36%) adults living with diabetes are undiagnosed.
- 1.1 million deaths due to diabetes in 2021.

Source: IDF Diabetes Atlas 10th Ed. www.idf.org

Prevalence of diabetes

By age and income group (%), 2021











Estimated Diabetes Prevalence in Four European Nations (IDF Factsheet 2021 Europe)

Prevalence in 20-79yrs adult population

Country	Prevalence	Age Adjusted Prevalence	Undiagnosed
Belgium	4.9%	3.6%	31.6%
France	8.6%	5.3%	27.8%
Netherlands	6.8%	4.5%	31.6%
UK	8.2%	6.3%	23.3%



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- **Belgium:** (IMA-Atlas Socio-Economic, Health, Health Care, and Health Insurance Indicators Publication. Updated April 2022)
- In 2020, 6.6% of the Belgian population was diagnosed as living with diabetes according to the IMA-AIM Atlas. (www.atlas.ima-aim.be)
- However, more than one in three people living with diabetes is not aware of their diabetes, which sets the estimated true prevalence of diabetes at 10%.
- The prevalence of diagnosed diabetes is the highest in the Walloon region and the lowest in the Flemish region, despite the relatively higher age of the Flemish population.
- The relatively low diagnosed diabetes prevalence in the Brussels Capital region is probably the result of the younger age structure: when corrected for age, the diagnosed diabetes prevalence becomes higher than the Belgian average.
- The BELHES has also shown that in the Walloon region more people are unaware of their diabetes eases/diabetes)







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- France:
- Type 2 diabetes accounts for the vast majority of cases of diabetes(92%)
- Diabetes has had the highest prevalence among all Affection de Longue Durée (ALD) conditions, and the number of patients covered has doubled in the past 10 years. ALD is a major or long-term illness for which the State accepts responsibility for the patient's health costs.
- The French population living with diabetes is older (average age 65), majority male (54%), with a significant percentage of immigrants (23% born outside of France), compared to 8% of the general population)

 Sources ttps://globalizationandhealth.biomedcentral.com/articles/10.1186/1744-8603-10-6#: IDF Diabetes Atlas 10th Ed. www.idf.org





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- The Netherlands:
- In 2018, 6.5% of the Dutch population was diagnosed as living with diabetes
- ~1M inhabitants
- The total economic burden in 2016 was found to be substantial, with an estimated total cost of € 6.8 billion.
- Changes in physical activity in people living with type 2 diabetes during societal lockdown are associated with changes in psychological factors such as perceived stress and emotional well-being.





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• United Kingdom:

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- Some 7% of the UK population are now living with diabetes
- Approximately one million people have undiagnosed type 2 diabetes
- Diabetes is responsible for 530 myocardial infarctions and 175 amputations every week.
- In the different UK nations: England circa 3,000,000: Scotland circa 275000: Wales circa 185,000: northern Ireland circa 85,000.
- Diabetes prevalence in the UK is estimated to rise to 5 million by 2025





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Diabetes Mellitus Prevalence: those aged 17 years and over and who are recorded as having diabetes mellitus, by GP, 2017/18





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• United Kingdom: Case Study

- Looked at prevalence at ICS Level K & M (Age 17+) (Quality and Outcomes Framework, 2020-21 NHS Digital)
- 19/20 6.99% (105,068 on registers for 198 GP practices)
- 20/21 7.04% (108895 On registers for 198 GP practices)

Top Ten Practices in various Primary Care Networks

- 1. Martello (Marsh) 11.74%
- 2. Rochester Road Surgery 11.70%
- 3. Church Lane (Marsh) 10.49
- 4. St Georges Sheppey 10.60%
- 5. Parrock St. Gravesend 10.38%

- 6. Sheerness Med Centre 10.23%
- 7. Gun Lane Strood 9.79%
- 8 Orchard House (Marsh) 9.54%
- 9 Oak Hall (Marsh) 9.42%
- 10 Summer Hill Ramsgate 9.32%



Diabetes Type 2 – A Public Health Issue

Diabetes reduces life expectancy in people aged 40-60 by av. 4-10 years



About 75% of this expenditure is due to preventable complications of the disease.



Across Europe, 59 M adults were living with diabetes in 2019, of whom 32 million were in the EU.



It is estimated that 41% of European adults with diabetes were undiagnosed in 2019 (24.2 million).



In 2019, the total diabetes-related cost to healthcare systems in the EU was around €100bn = 9% of Health Expenditure



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"With so many activity providers these days, patients like me can't see the forest for the trees"



"Everybody is different. Find out what suits your personal needs. DWELL's core pillars bring you outside of your comfort zone"



Gert de Jong - Ambassador

Marin Elsen - Ambassador

• Overview of program providers in the 2 Seas area pre-DWELL

Program	Region	Focus	Structure	Peer-Support
Qismet	UK (national)		unstructured	No
Sophia	FR (regional)		Structured	No
Halt2Diabetes*	BE (Flanders)	<i>₩ Х</i> ́* 🍎	Structured	Yes - *pre-diabetes
CooL	NL (national)	₩ *	Structured	No
KeerDiabetesOm	NL (national)	祝 术 é 義	Structured	No
	Local initiatives	記 - 木 🌢 🕰	Un-structured	
DWELL	UK/FR/BE/NL		Semi-Structured	Yes

What was missing:

1) personalisation / holistic focus 2) peer-support 3) cross-border approach

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What is DWELL?

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Development Manager Blackthorn Trust, UK Ruben Vanbosseghem Researcher Arteveldehogeschool, BE

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What is DWELL?

- 1. Holistic 12 week programme: how it was developed and delivered
- 2. Staff training programme
- 3. **DWELL Ambassadors**
- 4. Q&A

1. Holistic 12 week programme: how it was developed and delivered

DWELL Diabetes and Wellbeing

A holistic 12 week programme

How it was developed

- Co-design
 - Involving participants from day 1: focus groups, co-creation sessions, conversations, meetings, etc.
- Cross border collaboration
 - Combined expertise of project partners

Aims

- Putting participants in the driving seat
- Identify intrinsic motivator
- 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

DWELL 12-week programme

Nutrition	Physical activity
Cooking sessions, incl.	Walking group
portion control	Walking challenge
Shopping trip, incl.	Gym access
reading labels	Chair based exercise
Wellbeing	Education
Mindfulness	Interactive group sessions
Community choir	Quiz
Music group	Demo of products
Alternative therapies	Recommended resources
Support group	incl. website, apps, books

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Wellbeing Mindfulness Community choir Music group Alternative therapies Support group Physical activity Walking group Walking challenge Gym access Chair based exercise

Education Interactive group sessions Quiz Demo of products Recommended resources incl. website, apps, books

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Wellbeing Mindfulness Community choir Music group Alternative therapies Support group Education Interactive group sessions Quiz Demo of products Recommended resources incl. website, apps, books

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Wellbeing Mindfulness Community choir Music group Alternative therapies Support group

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1 to 1 motivational interview

Participants undertaking motivational interviews will...

- Identify their **intrinsic motivator** for attending the 12 week programme (long term)
- gain an **understanding** of the **DWELL** programme content
- start to **build a relationship** with the DWELL team
- be able to set their own goals
- be able to reflect on their journey

Education

Participants completing this module will...

- have knowledge about type 2 diabetes and to increase confidence in self-management
- **understand** its complications, treatment, rights and entitlement
- know how to prevent acute and chronic complications
- know when to seek and access additional medical help and services
- be able to **identify their barriers** for healthy lifestyle and define how to **overcome** these barriers
- be able to **set their own goals** for achieving a healthy lifestyle

Nutrition

Participants completing this module will...

- know and apply the recommendations, standards and benefits of healthy nutrition
- be able to **cook a healthy meal**
- be able to make healthier choices when buying food in a grocery store or supermarket
- be able to read and understand food labels correctly
- be aware of their eating pattern and habits in daily life

Physical activity

Participants completing this module will be able to...

- know and apply the recommendations, standards and benefits of physical activity
 - **assess** their physical activity and compare their activity to what is recommended
 - set a daily physical activity goal
- list their strengths and barriers and find solutions to overcome these barriers
- safely increase physical activity levels to improve physical and mental well-being

Wellbeing

Participants completing this module will be able to...

- **explore their own feelings** related to diabetes and nondiabetes challenges in their life
- describe their own strengths, talents, barriers and pitfalls to self-manage their diabetes successfully
- feel confident, supported and empowered
- explore their relationship with food
- Value, positive self regard, how to implement change, self compassion, resiliance

2. Staff training programme

DWELL staff training

Everyone delivering DWELL is assessed against core competencies to identify training needs:

- Developed and measured against skills competency framework
- Understand and apply the philosophy of the programme: change from medical to holistic approach - 'The DWELL Approach': Travel alongside the participants in their journey
- Good understanding of diabetes
- Group facilitation skills
- Motivational Interviewing techniques
- Professional competencies (cooking, therapy, etc.)

3. DWELL Ambassadors

Why DWELL Ambassadors

- Putting the participant in the driving seat
- Delivered in the community
- Co-design of the programme from the start
- Empowerment
- Power of the Ambassadors
- Support the DWELL programme

How DWELL Ambassadors are involved

- Recruitment of DWELL participants
- Marketing of the DWELL programme
- Continued peer support
- Testing apps
- Set up WhatsApp group
- Contributing to meet & greet
- Organising activities e.g. walking group, craft group
- Contributing to the design of the website
- Part of the design and development of the programme

Challenges

Depending on

- Culture
- Organisation structure / type of organisation
- Investments (time & resources)
- People, availability, skills,...
 - Meaningful & safe for ambassadors
 - Training & supervision

"I THINK IT IS ONE OF THE MOST WORTHWHILE 12 WEEKS I HAVE EVER SPENT IN MY LIFE." - DWELL PARTICIPANT

Any questions?

DWELL Virtual Final Conference: 13th October 2022

PRELIMINARY RESULTS OF DWELL EVALUATION STUDY

Prof Eleni Hatzidimitriadou, Sharon Manship, Dr Julia Moore, Thomas Thompson

Faculty of Medicine, Health & Social Care Canterbury Christ Church University

Evaluation of DWELL programme

Aim: to assess outcomes and impact of the 12-week programme for people with type 2 diabetes (T2DM).

Research questions:

1. What is the impact of the DWELL programme in terms of metabolic health, quality of life, empowerment, physical activity and self-care for people with T2DM?

2. What is the impact of the programme on self-management of diabetes in terms of participant attitudes and behaviours?

3. How do participants/staff/ambassadors view their experience with the DWELL programme?

4. What are the cost benefits of the DWELL programme?

Evaluation Study Design

	METHODOLOGY	
SOURCES	MIXED METHODS APPROACH	
 DWELL programme participants DWELL staff 	 Participant demographics and outcomes (repeated measures design) End-of-programme focus groups with participants 	
DWELL ambassadors	 Semi-structured interviews with staff, ambassadors, participants 	
 Materials from delivery of programme and training of staff and ambassadors 	 Facilitator feedback from Motivational Interviews Details of participants' goal setting 	

• Staff and Ambassador training materials and evaluations

PARTICIPANT OUTCOMES, PROCESS EVALUATION, COST EFFECTIVENESS, STAFF TRAINING

DWELL Tool

Evaluation Data Collected (2018-2022)

Evaluation Study Sample

Delivery Sites	DWELL PARTICIPANTS (at baseline)	DWELL STAFF	DWELL AMBASSADORS
UK1	150	6	4
UK2	135	2	4
France	202	7	6
Belgium	48	4	-
Netherlands	55	14	4
TOTAL	590	33	18

Highlights from Preliminary Findings

- ✓ Reductions in weight, BMI, waist circumference, HbA1c
- Enhanced empowerment
- Improved management of diabetes
 - ✓ Greater perceived personal control and understanding of diabetes
 - Decrease in negative feelings associated with diabetes
 - ✓ Increase in optimism for treatment and long-term prognosis of diabetes
 - ✓ Decrease in *eating in response to emotions and external cues*
 - ✓ Increase in *restrained eating*
- Improvement in physical and mental health
- Improved quality of life

Age, Gender and Ethnicity of Participants

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	UK	France	Belgium	Netherlands
Age (years)	N = 215	N = 154	N = 45	N = 55
	Mean: 61.84	Mean: 63.29	Mean: 64.24	Mean: 60.4
	SD: 10.99	SD: 9.409	SD: 8.363	SD: 11.06312
Age Bands	≤ 19: -	≤ 19: 1 (.6%)	≤ 19: -	≤ 19: -
	20–29:1 (.5%)	20 – 29: -	20 – 29: -	20– 29: -
	30 – 39: 5 (2.3%)	30 – 39: 1 (.6%)	30 – 39: -	30 – 39: 3 (5.5%)
	40 – 49: 24 (11.2%)	40 – 49: 6 (3.9%)	40 – 49: 1 (2.1%)	40 – 49: 4 (7.3%)
	50 – 59: 56 (26%)	50 – 59: 36 (23.4%)	50 – 59: 15 (31.3%)	50 – 59: 16 (29.1%)
	60 – 69: 69 (32.1%)	60 – 69: 75 (48.7%)	60 – 69: 17 (35.4%)	60 – 69: 23 (41.8%)
	70 – 79: 55 (25.6%)	70 – 79: 31 (20.1%)	70 – 79: 10 (20.8%)	70 – 79: 9 (16.4%)
	> 80: 5 (2.3%)	> 80: 4 (2.6%)	> 80: 2 (4.2%)	> 80: -
Gender	N = 227	N = 153	N = 45	N = 55
	Male: 102 (44.9%)	Male: 77 (50%)	Male: 20 (41.7%)	Male: 36 (65.5%)
	Female: 125 (55.1%)	Female: 76 (49.4%)	Female: 25 (52.1%)	Female: 19 (34.5%)
Ethnicity	N = 221	N = 153	N = 45	N = 55
•	White: 198 (89.6%)	White: 145 (94.2%)	White: 42 (87.5%)	White: 50 (90.9%)
	Asian: 14 (6.3%)	Asian: -	Asian: 2 (4.2%)	Asian: 1 (1.8%)
	Black/African/Caribbean: 8	Black/African/Caribbean: 4 (2.6%)	Black/African/Caribbean: 1	Black/African/Caribbean: -
	(3.4%)		(2.1%)	
	Mixed ethnic group: -	Mixed ethnic group: 4 (2.6%)	Mixed ethnic group: -	Mixed ethnic group:2 (3.6%)
	Other ethnic group: -	Other ethnic group: -	Other ethnic group: -	Other ethnic group: 2 (2%)

Metabolic Health pre- and post-DWELL: Weight

Participant weight changes at the end of the DWELL programme

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Metabolic Health preand post-DWELL: BMI

Metabolic Health pre- and post-DWELL: Waist Circumference

Metabolic Health pre- and post-DWELL: HbA1c

"I am down one Gliclazide, down one Metformin, and my bloods are just above pre-diabetic. And I've lost 17kg in 15 weeks" (UK focus group participant)

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External and Emotional Eating (expected reduction)

Perceptions of Illness

"Afterwards you have to take charge yourself...You are given the tools to work with, then it's up to you to sharpen the tools and make them last a long time" (France focus group participant)

Physical Activity

"Although I am not usually one to exercise, I am now trying...I walk up the stairs to my flat...I am using a floor cycle...I have been into town on the bus, which I hadn't done for two years. I'm setting goals for myself, like walking back from the group" (UK focus group participant)

Health Related Quality of Life

"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" (UK focus group participant)

Cost Effectiveness Analysis

Figure 2: health resource use (Netherlands)

Delivery Site	Types of costs for programme delivery	Total cost per participant	European Regional Development Fund
UK1	Expert staff, admin staff, supervision, equipment, educational material, cooking ingredients	£464 (€530) group of 10	
UK2	Expert staff, supervision, equipment, venue hire, educational material	£460 (€525) group of 10	Cost Effectiveness -
Belgium	Expert staff, facilitator, equipment, venue hire, materials	£367 (€419) group of 12	programme delivery costs per site
France	Expert staff, supervision, educational resources, cooking ingredients	£181 (€206) group of 20	
Netherlands	Expert staff (inc. specialist nurses), activity providers, equipment, promotional material	£429 (€489) group of 40	

Staff training

- DWELL staff competency framework addresses training needs of those delivering the programme
- Cross-border co-developed core training delivered to DWELL staff across 5 sites (including training on evaluation tools) (n=15)
- Additional site specific training, e.g. HbA1c testing, Good Clinical Practice (UK)
- Training evaluations and interviews with DWELL staff highlighted value of training:
 - Positive feedback regarding content and efficacy of training
 - Participants reported increased skills and knowledge about diabetes care
 - Reports of changed practice due to the application of new skills

Participant experiences of DWELL

Motivation	 Better understanding to manage T2DM and health Negative experiences
Facilitating factors	Feeling supportedProgramme content and set up
Challenges	 Operational/logistical barriers
Outcomes	 Enhanced health literacy and self-management Lifestyle changes and addressing habits Wellbeing and social outcomes

Long-term impact of DWELL programme

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Lessons from implementation of DWELL

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Facilitating factors

- Peer support
- Holistic, tailored approach
- Delivery style
- Nutrition element
- Environment

Barriers

- Resources
- Recruitment
- Challenges incorporating physical activity
- Wellbeing element

"We are there together, we progress together. The notion of 'professionals' disappears and we are just companions." (DWELL team member, France)

Any questions?

For queries relating to the DWELL evaluation please contact dwell@canterbury.ac.uk