

McCrossan, T, Lannon, R, Tarling, R, Dooher, M, Forshaw, MJ and Poole, H

Utilising the 'COM-B' bio-psychosocial approach to aid diabetes management

<https://researchonline.ljmu.ac.uk/id/eprint/17038/>

#### Article

**Citation** (please note it is advisable to refer to the publisher's version if you intend to cite from this work)

**McCrossan, T, Lannon, R, Tarling, R ORCID logoORCID:  
<https://orcid.org/0000-0001-8633-3807>, Dooher, M, Forshaw, MJ and Poole, H (2022) Utilising the 'COM-B' bio-psychosocial approach to aid diabetes management. Practical Diabetes. 39 (3). ISSN 2047-2897**

LJMU has developed **LJMU Research Online** for users to access the research output of the University more effectively. Copyright © and Moral Rights for the papers on this site are retained by the individual authors and/or other copyright owners. Users may download and/or print one copy of any article(s) in LJMU Research Online to facilitate their private study or for non-commercial research. You may not engage in further distribution of the material or use it for any profit-making activities or any commercial gain.

The version presented here may differ from the published version or from the version of the record. Please see the repository URL above for details on accessing the published version and note that access may require a subscription.

For more information please contact [researchonline@ljmu.ac.uk](mailto:researchonline@ljmu.ac.uk)

# Case Report :

## Utilising the 'COM-B' bio-psychosocial approach to aid diabetes management.

Dr Tracy McCrossan, C.Psychol, MBPsS, Health Psychologist, Western Health & Social Care Trust, Omagh Hospital & Primary Care Complex, 7 Donaghane Rd, Omagh, Northern Ireland, BT79 0NR [Current]. / Tracy McCrossan, MBPsS, Associate Psychologist, Western Health & Social Care Trust, Omagh Hospital & Primary Care Complex, 7 Donaghane Rd, Omagh, Northern Ireland, BT79 0NR [At time of writing].

Dr Rosa Lannon, C. Psychol, DClin.Psych, MBPsS, Specialist Clinical Psychologist, Western Health & Social Care Trust, Omagh Hospital & Primary Care Complex, 7 Donaghane Rd, Omagh, Northern Ireland, BT79 0NR.

Dr Rachel Tarling, C.Psychol, Registered Health Psychologist Liverpool John Moores University School of Psychology, Faculty of Health Tom Reilly Building Byrom Street, Liverpool, L3 3AF.

Dr Mary Dooher, C. Psychol, DClin.Psych, MBPsS, Consultant Clinical Psychologist, Western Health & Social Care Trust, Altnagelvin Area Hospital, Glenshane Rd, Derry, BT47 6SB.

Dr Mark Forshaw C.Psychol, C.Sci, FBPsS, FIHPE Subject Leader in Psychology, Registered Health Psychologist Liverpool John Moores University School of Psychology, Faculty of Health Tom Reilly Building Byrom Street, Liverpool, L3 3AF

Professor Helen Poole, C.Psychol, Registered Health Psychologist Liverpool John Moores University School of Psychology, Faculty of Health Tom Reilly Building Byrom Street, Liverpool, L3 3AF.

Correspondence Address: Dr Tracy McCrossan, C.Psychol, MBPsS, Health Psychologist, Western Health & Social Care Trust, Omagh Hospital & Primary Care Complex, 7 Donaghane Rd, Omagh, Northern Ireland, BT79 0NR.

## Abstract

With many individuals living with diabetes failing to make the necessary behaviour change to optimise glycaemic control <sup>1</sup> it is imperative that staff involved in their care have the skills required to guide them in this respect. The COM-B assists in this regard as it provides a behaviour-change model based on scientific evidence and theory in a practical and accessible format, which enables non-specialists to design and implement behaviour-change interventions. This paper reports a case of psychological assessment, formulation and intervention in a patient with Type 1 Diabetes Mellitus (T1DM) associated anxiety and sub-optimal diabetes management. It highlights: (1) the importance of a bio-psychological approach to assessment and formulation; (2) the value of involving the patient in their care from the outset; and (3) the ease at which the COM-B can be routinely applied in clinical settings.

## Key Points

- Diabetes has been considered one of the most behaviourally and psychologically demanding illnesses <sup>2</sup>.
- Health-care professionals have the opportunity to facilitate behaviour change with patients through the nature of their re-occurring one-to-one contacts.
- The COM-B provides a behaviour-change model based on scientific evidence and theory in a practical and accessible format.
- The COM-B model may provide a viable and cost-effective intervention for non-adherent adults with type 1 diabetes.

## Key words

Type 1 diabetes; COM-B; Behaviour Change; Health Psychology

## Introduction

Diabetes has been considered one of the most behaviourally and psychologically demanding illnesses <sup>2</sup>. A DOH Health and Wellbeing Report <sup>3</sup> aiming to structurally reform the Health and Social Care Service in Northern Ireland promotes a cultural change within the system, where supporting the wellbeing of the workforce has been considered, alongside moving towards a model of person-centred, compassion-based care. This report, along with its predecessor, *Transforming your Care* <sup>4</sup> presents a 'client-centred' vision of service delivery, in which individuals will be supported and empowered to take responsibility for maintaining good health and preventing deterioration of existing health difficulties. Secondary prevention strategies such as increasing emphasis on psychological wellbeing are elucidated. The Diabetes Review <sup>1</sup> echoes this focus on empowerment and self-management. The role of any clinician involved in an individual's care is to deliver support, care and evidence based treatment in a compassionate and respectful manner while empowering the individual. This is a complex task, which requires an understanding of behaviour change techniques for the clinician and a commitment to behaviour change for the individual. One of the models for understanding, designing and evaluating behaviour change within the bio-psychosocial approach is the COM-B <sup>5</sup>. The COM-B offers a guide to designing behaviour change interventions which is accessible to all and links three factors, namely Capability; Opportunity and Motivation to

form a behaviour system. As a result it can be used across the healthcare system from policy makers and clinicians to individuals keen to take an active role in self-management.

## Case Report

A 40-year-old woman with Type 1 Diabetes Mellitus (T1DM); on 'holiday' from Continuous Subcutaneous Insulin Infusion/Insulin Pump (CSII) was referred to the Clinical Health Psychology service by the Consultant Endocrinologist. The patient stated that the CSII holiday was initiated following *"Feeling overwhelmed, and struggling with diabetes management"*.

## Assessment

Formal assessment is thought to begin when an individual enters the consulting room, however there are opportunities for informal assessment prior to this. When the referral was received, the information contained was assessed; this patient had been using a CSII, which based on prior clinical experience indicates that they have been managing diabetes extremely well as CSII is not offered to those with poor management.

The formal assessment, in the format of a semi-structured interview following that developed by Belar<sup>6</sup>, attempts to examine each potential area of interest so that a full picture of the case is obtained prior to formulation and intervention. The Hospital Anxiety and Depression Scale (HADS)<sup>7</sup> was also completed. The scale was developed as a tool to detect anxiety and depression in individuals with physical health problems.

The patient was well informed about the nature of her condition, but reticent to explore emotional aspects of her current circumstances. Core therapeutic skills such as empathy, warmth and unconditional positive regard were focused on in an attempt to facilitate openness<sup>8</sup>. A 9-year history of T1DM was reported, which she felt was well managed until two years ago. At this time, she had started to be less conscientious about adhering to the medication regime and was allowing blood sugars to remain high, particularly in the evening. The patient was aware of the risks that this posed to her health and how she might manage, however felt unable to create a change in behaviour. She also noted being less physically active in the recent past.

## Contextual Information

Currently living in their own home with three young children, she noted a marriage breakdown two years previously. The patient was in full-time employment during the week, with some part-time work at the weekend. This helped her to *"keep busy"*, particularly when the children were not in her care.

She described herself as being *"very independent"* with difficulty asking for or accepting help. The patient described situations where family members had offered advice and practical assistance, however she did not avail themselves of this, reporting that it was her duty to care for her children.

Sleep pattern was reported as poor; with a difficulty falling asleep (due to head being *'busy'*) and often experiencing early morning waking (4-6am) with a heightened sense of dread, when head would again become *'busy'*. When the children were away (one night midweek and every other weekend), she reported being unable to fall asleep without the aid of her TV or phone. She also reported a tendency to comfort eat on those occasions when home alone.

In terms of goals for contact with psychology, the patient reported that she would like to be generally less anxious and prioritise her health. Successful therapy requires establishing relatively

clear collaborative goals and utilising interventions that are relevant to those therapeutic goals throughout <sup>9</sup>.

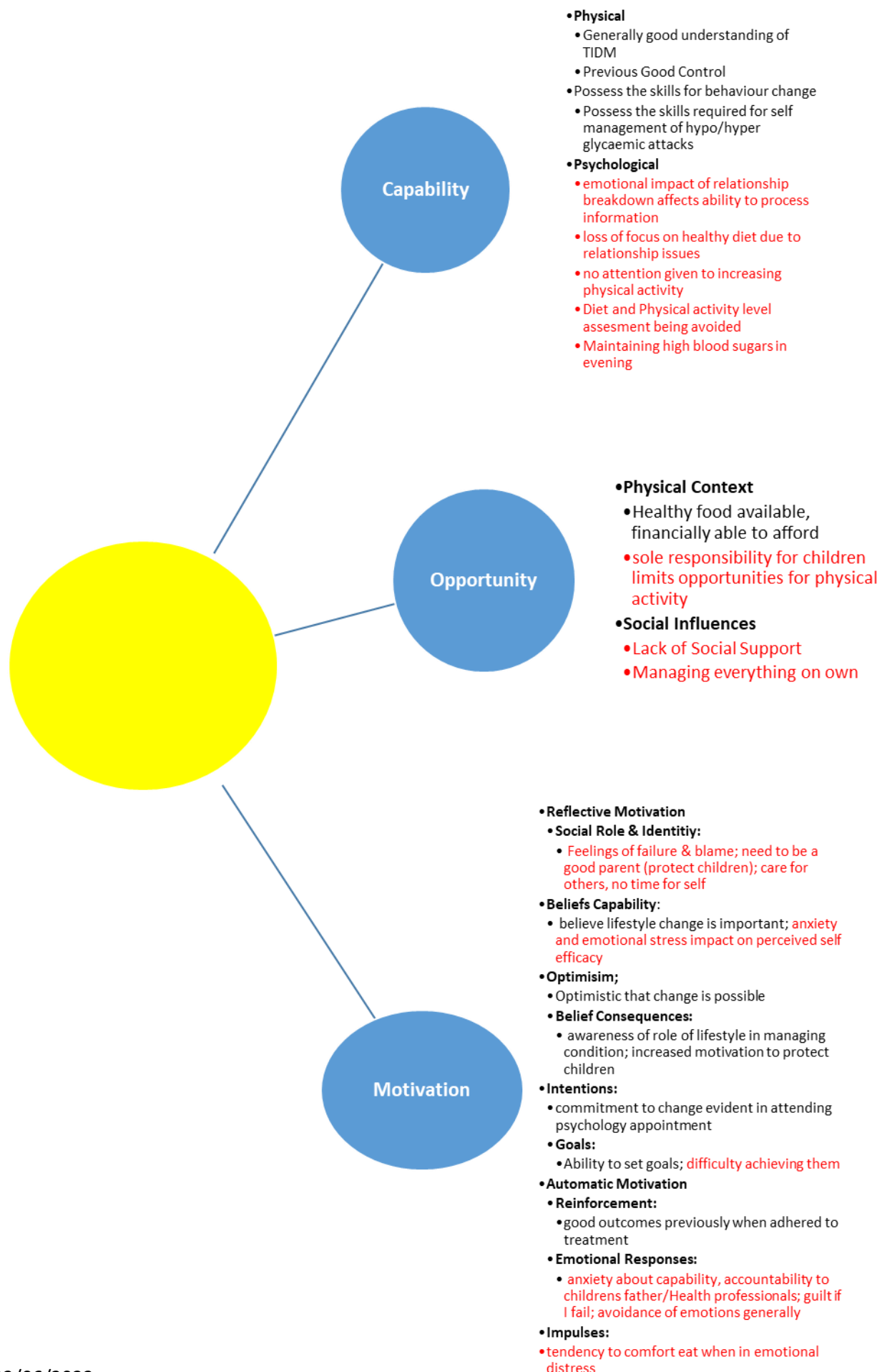
Mood was described as variable, noting increased anxiety, particularly in the morning, but throughout the day generally, with scores on the Hospital Anxiety and Depression Scale (HADS) <sup>10</sup> supporting this, indicating moderate symptoms of anxiety with depression in the sub-clinical range.

### Formulation

A bio-psychosocial framework was adopted for the formulation as it offers a framework in which we can understand how physical health problems can be maintained and treated over time <sup>10</sup>. The most recent model for understanding behaviour change proposed within this approach is the COM-B <sup>5</sup>, which links three conditions, namely Capability; Opportunity and Motivation to form a behaviour system.

If we apply the COM-B model to this formulation it looks like this (note the text in red are the areas focused on in sessions, while the text in black was included for context/understanding):

### FIGURE 1: COM-B MODEL<sup>5</sup>



## Intervention

The formulation above was presented at the beginning of our second session.

The patient reported finding the formulation useful as it allowed a detailed and more objective view of her current situation. She also reported that while it was easy to see the areas which weren't working well (red text) it was encouraging to reflect on the areas that were working (black text). This fostered a confidence that change could be achieved, and highlighted that the psychologist had an understanding of their situation. This facilitated further development of the therapeutic relationship, initiated during the assessment appointment.

The formulation indicated that while all areas of the COM-B required addressing in order to effect the behaviour change desired, the motivation for change was high. In terms of capability, from a knowledge and skills perspective this was also an area of strength, and these factors combined led the psychologist to believe that change may be possible in a small number of sessions; as such we scheduled four sessions after which time we agreed we would review progress. The patient was happy with this and stated feeling encouraged with the possibility of improvements in a short space of time.

Having taken time to explore the formulation together, it was proposed that the intervention would explore psycho-education around anxiety, at a pace the patient was comfortable with. This helped promote aspects of self-management, such as preventative measures and early intervention in the form of relaxation techniques, which in turn nurtured self-efficacy<sup>11</sup>. Relaxation training has been found to be helpful in lowering "arousal" and/or enhancing sense of control<sup>12</sup> and as such formed an important aspect of managing their anxiety. Psycho-education was also employed to illustrate best practice regarding the use of medication, however, this only served to confirm that the knowledge and skills already held in this area were high.

The patient reported heightened anxiety, which was particularly troublesome in the morning, however also described difficulty falling asleep in the evening and early morning waking, both of which, when explored further, also appeared related to anxiety. This was evidenced in the HADS with an initial scores in the moderate range for anxiety. Anxiety appeared to be an over-riding factor and while the initial referral centred on diabetes management, it was felt that without addressing anxiety fully it was unlikely that they would be in a position psychologically to consider behaviour change. Following psycho-education, a task of taking one hour each day ('worry hour') to consider the things that had caused anxiety or worry in that day was set. This was based on Borkovec's<sup>13</sup> previous indications that a 30-minute period of worry resulted in a reduction of negative thoughts. This was a task that was fully embraced.

The following appointment started with a review of the worry hour; they had started using a notepad and noted that all the concerns/worries had one central theme – her children, and being a "good parent". This facilitated further discussion and allowed us to explore what the value of being a "good parent" meant to her. It was at this point that the patient had something of an epiphany – where she realised that her children could not be protected, or have the best life, if she was physically or emotionally unwell. This appeared to enhance the motivation to explore what needed to change and the task set at the end of this session was to visualise being a "good parent", and see what might be different.

The patient presented with a noticeable smile at the next appointment. She reported that she had maintained the worry hour and felt that this was beneficial. She reported noticing reduced anxiety throughout the day and felt that the worry hour focused her thinking, so she had begun to prioritise

the things they worried about. As she was leaving the session she stopped to say that she had also started taking her insulin in the evening again prior to bed, and had made this part of the bedtime routine to try to maintain it.

The following appointment involved a review of the progress to date. The patient reported reinstating her evening insulin at the previous appointment and had maintained this. In terms of the goals set at the beginning of treatment she were happy that these had been achieved and was currently working towards a further goal – getting back into the gym. To achieve this she had asked her sister to look after the children for two hours per week. It was agreed that discharge at this time was appropriate and the patient stated feeling empowered to continue with improved diabetes management going forward.

## Discussion

The COM-B offers a theory based, yet practical and accessible model for the identification, development and evaluation of behaviour-change interventions. It assists in the clarification of the behaviour to be addressed as well as a method of identifying what needs to be addressed in order of priority. Once the behaviour requiring change has been identified, the model guides the clinician through a series of clinical judgements about how best to achieve the change required, combining theory with clinical judgement while still taking into account the practicalities of the real world setting.

The patient in this case was initially referred to Clinical Health Psychology to address poor adherence to diabetes medication. A readiness to change was reported by the patient, which was evidenced throughout the clinical assessment. The COM-B was employed in formulation as a way of clearly specifying the behaviour that needed to change as well as identifying which aspect was most important to address initially. Sharing this with the patient allowed both clinician and individual to be clear about the goals of the intervention and clarification of any areas that were unclear. As a result, the intervention was focused throughout and progressed to achievement of goals in an acceptable time frame.

While this assessment and resulting intervention focused heavily on psychological capability, it also had the potential to highlight five other areas which could potentially be addressed; physical capability, physical opportunity, social opportunity, reflective motivation and automatic motivation. The COM-B offers all suitably trained healthcare professionals, not solely those employed in health psychology settings, a practical model to identify an area of behaviour change, design a targeted intervention and evaluate its progress. As such, it is a model which should be considered in clinical outpatient settings throughout both primary and secondary care.

Clinical feedback from the referring agent in this particular case indicated that the patient reported finding psychology input beneficial. HbA1c results indicated that blood sugar levels remained consistent (71-74mmols) across the assessment and 4 treatment sessions (time range 9/10/19 – 15/1/20), which would suggest that medication adherence improved as they described.

The fact that this individual was ready to change led to a level of motivation and commitment that allowed her to move forward at a pace that suited and ultimately benefitted both her, and her family. The use of the COM-B model alongside clinical judgement meant that she was involved in her care plan at all stages and as such was invested in a positive outcome from the start. Utilisation of the COM-B model routinely by healthcare professionals in diabetes outpatient clinics may provide an acceptable way to engage individuals more fully in self-management of their condition.



## References

1. Department of Health, Social Services & Public Safety. (2014). *Report of the Diabetes Review Steering Group: Reflecting on Care for people with Diabetes 2003-13*. Department of Health, Social Services & Public Safety.
2. Cochran, J. and Conn, V.S. (2008) Meta-Analysis of Quality of Life Outcomes Following Diabetes Self-Management Training. *The Diabetes Educator*, 34, 815-823.  
<https://doi.org/10.1177/0145721708323640>
3. Department of Health (2016) Health and Wellbeing 2026: Delivering Together [online]  
Available at: <https://www.health-ni.gov.uk/sites/default/files/publications/health/health-and-wellbeing-2026-delivering-together.pdf>  
[Accessed: 05/03/2019]
4. Department of Health Social Services and Public Safety. (2011). *Transforming your Care: A review of health and social care in Northern Ireland*. Belfast: Department of Health Social Services and Public Safety.
5. Michie, S., van Stralen, M.M. and West, R. (2011) The behaviour change wheel: a new method for characterising and designing behaviour change interventions. *Implementation Science* : 15, 6, 42-42.
6. Belar, C.D. (2009) *Clinical health psychology in medical settings: a practitioner's guidebook*, 2d ed. Deardorff, W. W. Washington, DC: American Psychological Association.
7. Zigmond, A.S. and Snaith, R.P. (1983) The Hospital Anxiety and Depression Scale. *Acta psychiatrica Scandinavica*, 67 (6), 361-370.
8. Rogers, C.R. (2004) *On becoming a person : a therapist's view of psychotherapy*. London : Constable: London : Constable.
9. Green, R.J. and Herget, M. (1991) Outcomes of systematic/strategic team consultation:III> The importance of therapist warmth and active structuring. *Family Process*, 30, 321-336.
10. Williams, D.A. (2002) Improving physical functional status in patients with fibromyalgia: a brief cognitive behavioral intervention. *Journal of Rheumatology*, 29 (6), 1280-1287.
11. Kelly, C. (2008) Psychological effects of chronic lung disease. *Nursing times*, 104 (47), 82.
12. Edgar, L. (1992) Coping with cancer during the first year after diagnosis. Assessment and intervention. *Cancer*, 69 (3), 817.
13. Borkovec, T.D., Robinson, E., Pruzinsky, T. and Depree, J.A. (1983) Preliminary exploration of worry: Some characteristics and processes. *Behaviour Research and Therapy*, 21 (1), 9-16.

