

# Motivational interviewing to change type 2 diabetes self-care behaviours

Cheryl Dellasega, Robert Gabbay,  
Kendra Durdock, Nancy Martinez-King

## Article points

1. Self-care is an important component of chronic conditions such as diabetes.
2. Often, healthcare professionals adopt a paternalistic attitude in trying to convince people to change behaviour.
3. Motivational interviewing can often be successful in empowering people with diabetes to change self-care behaviours.

## Key words

- Improving outcomes
- Motivational interviewing
- Self-care
- Type 2 diabetes

Cheryl Dellasega is Professor of Humanities, Penn State College of Medicine; Robert Gabbay is Professor of Medicine, Director of Penn State Institute for Diabetes and Obesity; Kendra Durdock is a Diabetes Nurse Case Manager, Hershey Medical Center; and Nancy Martinez-King is a Diabetes Nurse Case Manager, Hershey Medical Center, Hershey, Pennsylvania, US.

The Diabetes Nurse Case Management and Motivational Interviewing for Change (DYNAMIC) study was designed to translate empirical knowledge regarding type 2 diabetes treatment and management into a clinical intervention that improves health outcomes. This article describes the results of a focus group study conducted for quality control and to determine how individuals from the various clinics involved responded at the midpoint of the DYNAMIC study.

As with other chronic conditions, self-management is key for people with type 2 diabetes. However, this can require an extra 2 hours each day to carry out (Russell et al, 2005). In addition to time constraints, individuals may not wish to make lifestyle changes because of financial or transportation problems, availability of, or access to, healthcare professionals, and/or cultural belief systems (Strauss et al, 2006; Saydah et al, 2007; Nwasuruba et al, 2009).

In the authors' experience, many healthcare professionals fail to fully explore whether people with diabetes follow through on their suggestions or determine whether barriers to self-management can be modified or not. Consequently, adherence rates are low, and in the US, mean HbA<sub>1c</sub> levels have not changed in the past decade (Saydah et al, 2004). Approximately 7% of people with diabetes have HbA<sub>1c</sub>, LDL-cholesterol, and blood pressure levels within recommended ranges (Saaddine et al, 2002).

In addition to myriad physical complications, diabetes adversely affects the emotional health and wellbeing of those with the condition. Clinical depression rates among those with diabetes are estimated to be between 10% and 30% (Anderson et al, 2001; Li et al, 2008). Since cognitive function influences the ability to manage daily self-care, psychological difficulties can have an indirect but negative impact on glycaemic control.

## Changing behaviour

Experts in diabetes education suggest that the greatest challenge to improving outcomes for people with type 2 diabetes is more effective multi-component behaviour change strategies (Norris et al, 2004). "Typical" approaches include scare tactics, advice-giving, badgering, and other highly directive styles that are not conducive to behaviour change (Moran et al, 2008). In contrast, approaches that include patient empowerment, education, psychosocial

understanding, and, more recently, brief behaviour change counselling, have shown promising results (Miller and Rollnick, 2002).

### Motivational interviewing as a behaviour change strategy

Motivational interviewing (MI) is a person-centred counselling approach that actively engages people and draws on their underlying motivation for change (Miller, 1983; Rollnick et al, 1999). MI specifically stresses the importance of understanding each person's unique perspectives and priorities when developing a treatment plan, then uses reflective listening, therapeutic communication, and rapport-building skills to encourage empowerment and behaviour change (Miller, 1983; Miller and Rollnick, 1991).

### Nursing practice and behaviour change

Nurses have long been at the forefront of trying to help people with chronic conditions change their health behaviours (Brodie and Inoue, 2005). In the Healthy Aging Project (Bennett et al, 2005) nurses used a form of MI to counsel 86 physically inactive adults living in rural areas regarding physical activity. They found that after 6 months the nurse-coached group did not have significantly increased physical activity, but did have increased levels of self-efficacy for exercise in comparison with the control group. The investigators attributed the lack of increased physical activity due to seasonable effects or the short duration of the MI sessions.

### Aim

This study was conducted for quality control and to determine how individuals from various clinics responded at the midpoint of the Diabetes Nurse Case Management and Motivational Interviewing for Change (DYNAMIC) intervention.

### Methods

The focus group described in this article was part of DYNAMIC, a larger investigation funded by the National Institutes of Health (NIH R18-DKO67495). DYNAMIC was designed to translate empirical knowledge

regarding diabetes treatment and management into a clinical intervention that improves health outcomes. A grant was awarded to enable researchers to undertake a 5-year randomised controlled trial involving adults with type 2 diabetes from diverse clinics throughout central Pennsylvania – a largely rural location with many medically under-served areas. The control group ( $n=247$ ) received standard care for type 2 diabetes (American Diabetes Association [ADA], 2002) while the treatment group ( $n=247$ ) received standard care plus the DYNAMIC intervention.

Prior to recruiting for DYNAMIC, three experienced registered nurses were employed for the study. The nurses received 4 months of specialised education in type 2 diabetes, case management, and MI. They were provided continuous feedback from experts via observations, feedback from audio and video tapes, and regular standardised analysis of taped visits to assure fidelity to the intervention protocol. These nurses were an ongoing part of the DYNAMIC study team and met weekly with the principal investigator and co-investigator to discuss the progress of the study and any other issues that needed. Additional activities they engaged in were dissemination of information about the study through a newsletter, attendance at health fairs, presentations about DYNAMIC at local venues, as well as professional conferences and assistance with authorship of articles. All kept a daily diary to record their thoughts and observations about implementation of the MI intervention and how people responded.

An evidenced-based protocol was developed for case management of people with type 2 diabetes so the study nurses could work in collaboration with physicians. The nurses would address the management of blood glucose, hypertension, hyperlipidaemia and depression, and recommendations were based on the ADA's (2009) Clinical Practice Recommendations and the Institute for Clinical Systems Improvement (2009) guidelines.

After recruitment into DYNAMIC, individuals were seen at 2, 4 and 6 weeks, and then at a minimum of every 3–6 months. The intervention phase of the study lasts 2 years.

### Page points

1. Motivational interviewing (MI) is a person-centered counselling approach that actively engages people and draws on their underlying motivation for change.
2. This study was conducted for quality control and to determine how individuals from various clinics responded at the midpoint of the Diabetes Nurse Case Management and Motivational Interviewing for Change (DYNAMIC) intervention.
3. An evidenced-based protocol was developed for case management of people with type 2 diabetes so the study nurses could work in collaboration with physicians.

### Page points

1. The initial design of DYNAMIC included the conduct of regular focus groups for quality control purposes.
2. Participants in the focus group were >21 years of age with type 2 diabetes, and with an HbA<sub>1c</sub> level of >7.5% (>58 mmol/mol).
3. Four groups representative of the eight study sites were held at staggered times of day within the same week to permit full participation by people with diabetes.
4. Each interview was taped (with permission from participants), transcribed and validated by facilitator review.

### Focus group

The initial design of DYNAMIC included the conduct of regular focus groups for quality control purposes. Results of the first focus group have been reported elsewhere (Gabbay and Dellasega, 2008).

Focus group two was conducted for quality control and to determine how individuals from various clinics responded to the study intervention at the midpoint. The authors also wanted to describe the salient concepts of MI 1 year after beginning the study. Since these questions required data that was rich in thoughts, feelings and beliefs of the participants and allowed for a sharing of experiences, focus group methodology was used.

### Participants

Participants in the focus group were >21 years of age with type 2 diabetes, and with an HbA<sub>1c</sub> level of >7.5% (>58 mmol/mol).

Since the goal of the focus group was related to the study intervention, only individuals in the treatment group were eligible to participate. All those who had been enrolled in the study for 6 months (midpoint) were invited to participate. Of those approached, enrolment rate averaged 22%. Reason for non-participation included time (approximately 20%), transportation issues (approximately 15%), other competing health issues (10%), denying they needed help (approximately 25%), no reason (10%), other family responsibilities (5%).

Four groups representative of the eight study sites were held at staggered times of day within the same week to permit full participation by people with diabetes. The following prompts were used in conducting the groups:

- How has it been for you to meet with the nurse?
- Has any part of your diabetes self-care changed since you started meeting with the nurse?
- What, if anything, has been different about your health since you became part of the DYNAMIC study?
- What, if anything, have you found unpleasant or difficult about the visits with the nurse?

After informed consent specific to focus group participation was collected, the facilitator introduced herself and invited participants to do the same. She then provided a brief overview of the purpose of the interviews and welcomed all input. On conclusion of the groups she recorded significant observations such as body language and group agreement around statements.

### Data analysis

Each interview was taped (with permission from participants), transcribed and validated by facilitator review. All identifiers were removed from the transcripts to prevent the DYNAMIC nurses from identifying their patients. Interpretative phenomenological analysis (Smith, 2004) was used to analyse the data. This is a qualitative method for analysing data based on phenomenology and intended to uncover how people interpret and make meaning of experiences.

Accordingly, each member of the research team reviewed the transcripts independently, identifying themes within and between groups that reflected participants responses to MI and concepts of MI that emerged. The team then met to share the themes they had identified and compare and contrast findings on the basis of both individual participant responses and group responses. Themes related to nurse-led MI intervention were then compared and contrasted with what the team understood as standard practice in diabetes care (ADA, 2009).

### Results

A total of 19 participants (10 male) contributed to the focus groups. Groups were kept small to promote comfort and facilitate use of focus group methodology. The mean age was 62.1 years. Based on participant statements, the following categories were identified:

#### Gentle accountability versus shame and blame

Through their interactions with the nurses, participants gained several insights. A key one was their desire for a regular check-in about their self-care that did not involve policing, scolding, or being treated like a child. A

respectful but regular evaluation and assessment of their self-care behaviours helped keep awareness of their importance in the forefront. The non-judgmental way in which nurses presented feedback was beneficial.

As part of accountability, the participants examined their situations and decided which, if any, self-care behaviours they were willing to address. Since goal-setting occurred with the individual's permission and at his or her initiative, the feedback and accountability process became a discussion rather than a disagreement or dictate. Even when people had "slipped" and their laboratory values were not ideal, they still felt the nurses were gentle and did not believe it was their "fault" for abnormal results.

"It was as if the nurses were there with you; they just came along side and accepted you," said one individual.

The DYNAMIC approach avoids engaging in power struggles over needed behaviour change, which often led people to willingly take on the responsibility for their care and appreciate the opportunity to do so. "Coming along side" is a key MI concept, which conveys the role of the healthcare professional as an ally and advocate, rather than a superior or paternalistic supervisor.

#### **Providing what was needed versus "prescribing" by protocol**

As part of case management, nurses identify resources and provide for individuals' needs, among other functions. However, focus group participants reflected on the way in which the study nurses were able to go beyond allocating supplies and understand what their true priorities and needs were. In this way, they received not what the nurses believed they needed or what the standard treatment plan suggested was appropriate, but what they truly valued, even if these two were different. (When safety concerns were detected by the nurses, i.e. suicidal behaviours, dangerously high blood glucose levels, MI was set aside and the immediate life threatening concern addressed as a crisis.) Along with learning new information from the nurses, the participants often had their prescriptions clarified.

#### **Support through denial and depression versus a focus on physical parameters**

Often, healthcare professionals tend to focus on physical symptoms and adjust care accordingly. In the focus groups, as participants talked about what the nurses did for them, they often spoke of the difficulty coping with the reality of a chronic condition – in fact, this was one of the reasons for some people refusing to participate in the study: "my diabetes isn't that bad."

Consequently, the nurses were able to listen to the feelings and emotions people had about their diabetes before reviewing lab results or listening to heart sounds. This ability to "sit with" people as they grieved the loss of "normalcy" led to beginning acceptance of diabetes. The use of MI allowed individuals to feel supported and understood in a difficult circumstance.

#### **Communication skills that connected to true concerns versus ticks in boxes**

Beyond therapeutic communication skills that nurses use to obtain required information, the nurses used MI in a way that provided the opportunity for the people with diabetes to take the lead in identifying their feelings about changing their self-care behaviour. Many of these techniques go beyond the standards of therapeutic communication and reflect the core techniques of MI. For comparison of statements that might be made during the course of a "normal" patient encounter, and one in the study which used MI, see *Table 1*.

#### **Motivating and empowering versus negative feedback**

Although it was not the role of the nurse to be the motivation for the individuals with diabetes, it was their role to find ways that might empower people to act and draw on underlying motivations toward change. For example, one person who had stopped testing her blood glucose levels at home was reported by the physician as a "difficult case." The nurse met with this individual and explored which, if any, behaviours she might be interested in changing. The participant explained that she wanted to test her blood glucose levels, but the procedure

#### **Page points**

1. As part of accountability, the participants examined their situations and decided which, if any, self-care behaviours they were willing to address.
2. As part of case management, nurses identify resources and provide for individuals' needs, among other functions.
3. Often, healthcare professionals tend to focus on physical symptoms and adjust care accordingly. In the focus groups, as participants talked about what the nurses did for them, they often spoke of the difficulty coping with the reality of a chronic condition.

**Page points**

1. People with diabetes, rather than nurses or physicians, identify the goals they wish to achieve in relation to their condition.
2. The researcher's beliefs are an important part of interpreting participants' experiences. Therefore, the nurses' observations and notations were an important part of the analysis.

was simply too painful. On examination, the nurse discovered the settings on the blood glucose monitor were wrong, which was easily corrected. The woman then began testing daily. More importantly, she felt listened to and as if she was capable of participating in her care.

Others described an element of hope they felt when interacting with the nurse, particularly when engaging in goal setting. People with diabetes, rather than nurses or physicians, identify the goals they wish to achieve in relation to their condition. The nurse then helped the person develop an action plan to meet and maintain their goals.

**Nursing analysis**

In processing these findings, the nurses used diary notes and observations to make meaning of patient statements in the focus group. Since interpretative phenomenological analysis is concerned with the meaning an experience holds for people, personal feelings and responses are focused on rather than objective measures (Todd et al, 2010). In conjunction, the researcher's beliefs are an important part of interpreting participants' experiences. Therefore, the nurses' observations and notations were an important part of the analysis.

**Table 1. A comparison of statements made during the course of a typical review and motivational interviewing.**

<b>Motivational interviewing theme</b>	<b>Sample statement</b>	<b>Traditional theme</b>	<b>Sample statement</b>
Gentle accountability	"Last visit we discussed monitoring your blood glucose more. How is that going for you?"	Shame and blame	"I'm surprised you are not more concerned about your blood glucose values, given that your mother died from diabetes complications."
Provide what is needed	"I have some information on low cholesterol diets if you think that would be helpful?"	Prescribe by protocol	"Your cholesterol is still too high so I'm going to make sure the doctor writes you a script for a statin."
Support through denial and depression	"It seems like it is difficult for you to accept the diagnosis. It sounds like you are feeling depressed about the future and fear complications."	Focus on physical	"Your lab results are back and you have diabetes. We need to start you on metformin and do a foot foot exam today. Have you had a recent eye exam?"
Communication skills connect true concerns	"What are some of the things you are finding difficult since starting on insulin? What can I help you with today?"	Ticks in a box	"Ok. You are now on 30 units of insulin at bedtime and following the ADA (2009) 1800 calorie diet. You should be walking three times a week, and need a flu shot and a blood pressure check."
Motivate and empower	"I appreciate how difficult it has been to cut down on your smoking. At this point, how motivated are you to stop totally?"	Negative feedback	"I am disappointed to hear that you are still smoking. I thought we discussed the importance of quitting and you have only cut back to half a pack per day. You must try harder."



The study nurses concluded that the subset of focus group participants mirrored in many ways the individuals they had cared for in the past, or those they saw in the clinic who were not part of the study. Specifically, the components of MI that engaged the people with diabetes and gave them the support to establish goals and pursue them was appreciated more than the traditional approach of “the provider knows best.”

However, there were some measurable behavioural changes such as weight loss, laboratory values normalising due to medication or lifestyle change, more trust and better rapport with physicians, openness and sharing confidences with the study nurses. Some individuals described the nurses as their advocates. Not surprisingly, depression and stress management are two issues that the nurses reported addressing frequently in their visits with study participants, and MI was a useful approach here, too.

The nurses noted that physicians generally overestimate adherence, whereas providing empathy and being non-judgemental facilitates accurate reporting of self-care behaviour by people with diabetes. They also describe MI as a technique that allows “natural nursing tendencies toward empathy” to be manifest.

Although clinical inertia is considered a common problem in diabetes care, the nurses’ experience is that even when physicians suggested appropriate changes, people often did not make them because they were not ready, or for easily remedied reasons unknown to the physician, such as lack of education on how to perform foot care. MI is a strategy that the nurses found effective in helping them to facilitate an individual’s acceptance of recommendations, such as taking a new medication, monitoring on a regular basis, or taking insulin.

### Summary

In comparison with standard practice, people with diabetes responded to MI style visits from trained nurses in a way that led to beneficial health outcomes. Since the

study is ongoing, outcome data has not been analysed, but the study nurses note that many individuals have achieved behavioural goals for the first time.

While the protocol for this study is skewed to allow the nurses time and flexibility with participants (their caseloads are reasonable and relationships were, at the time of this study, ongoing for over a year), key aspects of the intervention are identified here so as to enhance translation into usual care.

### Key findings

Preliminary baseline analyses revealed that all study participants (control and treatment group) had more diabetes-related psychological distress, lower adherence to most self-care behaviours, lower satisfaction with treatment, and more depression than generally reported in the literature. They are, therefore, a group at risk for poor outcomes.

Results of the focus group analysis reveal that the intervention has had a positive impact on some psychological parameters not measured quantitatively. For example, some individuals felt empowered to make lifestyle changes related to nutrition and exercise, and their confidence in their ability to handle challenges improved. It is important to note that many of the focus group comments suggested that the nursing knowledge and professional background enhanced the MI component of the intervention.

In the bimonthly newsletter developed for treatment group participants, volunteers shared dramatic stories of their enhanced ability to accept their condition, lower stress levels around specific self-care behaviours, such as monitoring, coping more effectively with chronic illness, and taking a more active role in self-management.

### Limitations

Doubtless, some of these perceptions arose because the study nurses had the benefit of more time to spend with the people with diabetes. Each visit was allotted 1 hour, so the pressure to process cases quickly, so much a part of the regimen of usual clinic practice, was not an issue.

### Page points

1. The study nurses concluded that the subset of focus group participants mirrored in many ways the individuals they had cared for in the past, or those they saw in the clinic who were not part of the study.
2. The nurses noted that physicians generally overestimate adherence, whereas providing empathy and being non-judgemental facilitates accurate reporting of self-care behaviour by people with diabetes.
3. In comparison with standard practice, people with diabetes responded to MI style visits from trained nurses in a way that led to beneficial health outcomes.

Page points

1. Motivational interviewing (MI) is a therapeutic communication strategy that has great relevance both for nursing and general medicine.
2. The authors found that key concepts of MI (empowerment, emotional support, communication skills, and motivation) were especially valuable and relatively feasible to use in the primary care setting.

Conclusions

MI is a therapeutic communication strategy that has great relevance both for nursing and general medicine. When working with individuals whose chronic conditions require self-care and monitoring, this technique allows doctors, nurses and patients to function as a team. Deciding when it is more appropriate to use MI or standard healthcare approaches is one challenge that emerged, and specific training strategies for medical personnel (as opposed to therapists and counsellors) are indicated.

The authors found that key concepts of MI (empowerment, emotional support, communication skills and motivation) were especially valuable and relatively feasible to use in the primary care setting. While it is different for some individuals to find themselves placed in an active role, initial resistance (especially among older adults) can be effectively transformed into active participation. The facilitator's field notes comment on the many times when heads would nod and an entire group would agree with positive statements about the DYNAMIC intervention.

The study nurses felt this intervention led to better relationships with doctors, empowerment, and support of self-efficacy. Their sessions to promote behaviour change were described as: "more of a dance than a wrestling match, as usually occurs" and "what nursing is really all about." ■

American Diabetes Association (2002) Standards of medical care for patients with diabetes mellitus. *Diabetes Care* **25**: 213–29

American Diabetes Association (2009) Standards of medical care in diabetes – 2009. *Diabetes Care* **32** (Suppl 1): S13–61

Anderson RJ, Freedland KE, Clouse RE, Lustman PJ (2001) The prevalence of comorbid depression in adults with diabetes: a meta-analysis. *Diabetes Care* **24**: 1069–78

Bennett JA, Perrin NA, Hanson G et al (2005) Healthy aging demonstration project: nurse coaching for behavior change in older adults. *Res Nurs Health* **28**: 187–97

Brodie DA, Inoue A (2005) Motivational interviewing to promote physical activity for people with chronic heart failure. *J Adv Nurs* **50**: 518–27

Gabbay R, Dellasega C (2008) Patient perceptions of motivational interviewing. *Diabetes* **57** (Suppl 1): A522

Institute for Clinical Systems Improvement (2009) *Health Care Guideline: Diagnosis and Management of Type 2 Diabetes in Adults*. ICSI, Bloomington, MN, US

Li C, Ford ES, Strine TW, Mokdad AH (2008) Prevalence of depression among U.S. adults with diabetes: findings from the 2006 behavioral risk factor surveillance system. *Diabetes Care* **31**: 105–7

Miller WR (1983) Motivational interviewing with problem drinkers. *Behavioral Psychotherapy* **11**: 147–72

Miller WR, Rollnick S (1991) *Motivational Interviewing: Preparing People to Change Addictive Behavior*. Guilford Press, New York

Miller WR, Rollnick S (2002) *Motivational Interviewing: Preparing People to Change Addictive Behavior*. 2nd edn. Guilford Press, New York

Moran J, Bekker H, Latchford G (2008) Everyday use of patient-centred, motivational techniques in routine consultations between doctors and patients with diabetes. *Patient Educ Couns* **73**: 224–31

Norris SL, Zhang X, Avenell A et al (2004) Long-term effectiveness of lifestyle and behavioral weight loss interventions in adults with type 2 diabetes: a meta-analysis. *Am J Med* **117**: 762–74

Nwasuruba C, Osuagwu C, Bae S et al (2009) Racial differences in diabetes self-management and quality of care in Texas. *J Diabetes Complications* **23**: 112–18

Rollnick S, Mason P, Butler, C (1999) *Health Behaviour Change: A Guide for Practitioners*. Churchill Livingstone, Edinburgh

Russell LB, Suh DC, Safford MA (2005) Time requirements for diabetes self-management: too much for many? *J Fam Pract* **54**: 52–6

Saaddine JB, Engelgau MM, Beckles GL et al (2002) A diabetes report card for the United States: quality of care in the 1990s. *Ann Intern Med* **136**: 565–74

Saydah SH, Fradkin J, Cowie CC (2004) Poor control of risk factors for vascular disease among adults with previously diagnosed diabetes. *JAMA* **291**: 335–42

Saydah S, Cowie C, Eberhardt MS et al (2007) Race and ethnic differences in glycemic control among adults with diagnosed diabetes in the United States. *Ethn Dis* **17**: 529–35

Smith JA (2004) Reflecting on the development of interpretative phenomenological analysis and its contribution to qualitative research in psychology. *Qualitative Research in Psychology* **1**: 39–54

Strauss K, MacLean C, Troy A, Littenberg B (2006) Driving distance as a barrier to glycemic control in diabetes. *J Gen Intern Med* **21**: 378–80

Todd D, Simpson J, Murray C (2010) An interpretative phenomenological analysis of delusions in people with Parkinson's disease. *Disabil Rehabil* Jan 20 [Epub ahead of print]