

Integrated care: evaluation of patient satisfaction with education provided by the diabetes specialist nurse

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Article points

1. Patients were surveyed to assess the impact of nurse-led education in primary care.
2. Patients agreed or strongly agreed that the education improved their understanding of: diabetes, physical activity to stay well, healthy eating, carbohydrate portion size, medication and HbA_{1c}.
3. Participants' confidence and motivation to manage their diabetes was increased.

Key words

- Education
- Integrated care
- Patient satisfaction
- Survey

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Evidence suggests that the nurse specialist has a key role in supporting the integrated management of chronic disease through nurse-led clinics in primary care. The National Clinical Programme for Diabetes was established in 2010 to improve care for people with diabetes in Ireland. The new model of integrated care aims to standardise diabetes management. This article reports on patient satisfaction with education sessions developed and run by the diabetes nurse specialist – integrated care in the West of Ireland. The satisfaction survey assessed the impact of education on patients' understanding of and motivation to manage diabetes and planned lifestyle changes.

Type 2 diabetes (T2D) requires patients to make challenging self-management changes that may go against long-established routines. These lifestyle changes can seem overwhelming and often require improved coping skills. Helping patients understand how to care for themselves may improve their overall T2D care (American Association of Diabetes Educators, 2011; American Diabetes Association, 2014).

Systemic reviews of randomised trials show that self-management education with comprehensive lifestyle interventions improves glycaemic and cardiovascular risk factor control (Loveman et al, 2008; Jarvis et al, 2010). Diabetes nurse specialists in integrated care (DSNICs) are ideally positioned to provide such education. In County Galway in the West of Ireland, the DSNIC provides diabetes education in GP practices to over 300 patients with T2D each year. A satisfaction survey was designed to assess the impact of education on patients' understanding of their condition, their confidence, motivation to manage their diabetes and any planned changes to their lifestyle – particularly healthy eating and physical activity.

Developing patient education

The DSNIC created an education programme for individuals with a diagnosis of T2D. The 45-minute session was structured to cover the topics listed in the author's diabetes education checklist. It was developed based on the empowerment and trans-theoretical models of behaviour change and adult learning theory (andragogy) to encourage patient engagement and support self-management.

Andragogy

The DSNIC assesses the patient's readiness to learn – reviewing past experiences to support this – and provides practical, problem-centred approaches to learning. The patient's agenda is reviewed and the foundations of learning are built based on the patient's personal knowledge and motivation to self-manage his or her diabetes.

The patient's understanding of T2D in the body and the impact of healthy eating, physical activity and weight management are explored. Resources such as the healthy eating food pyramid, food diary, physical activity diary and literature on starting and maintaining physical activity are provided. The

patient is helped to understand what his or her HbA_{1c} is and what the recommended targets are. Blood pressure and cholesterol are explained in detail.

All measurements are given to the patient in his or her diabetes passport, see *Figure 1*, which the DSNIC developed to assist with self-management. The diabetes passport contains information on screening checks, explains good diabetes control and targets, gives hypoglycaemia advice and includes information on healthy eating and physical activity.

The DSNIC helps the patient understand his or her medication, how it works and when best to take it. Future medication options for improving diabetes control are also discussed so the patient is involved in the decision-making process.

Empowerment

Empowerment can help patients with T2D choose personally meaningful, realistic goals related to eating right, staying active and other important aspects of self-management (Anderson and Funnell, 2010). The education session involves the patient identifying problems, reviewing possible solutions, exploring feelings, creating a plan and reviewing this in an agreed timeframe with the DSNIC. This approach helps the patient realise the benefits of behaviours such as healthy eating and physical activity.

Engaging patients on an individual level may help foster a shared decision-making approach and places patients at the centre of care, which may enhance adherence to therapy (Inzucchi et al, 2012). Cooper et al (2008) note that the empowerment of patients with diabetes helps them adopt appropriate healthy behaviours and improves self-management practices.

The DSNIC uses a combination of motivational interviewing and teaching techniques to assist with knowledge development and facilitate patient involvement in the planning and review of care. Self-management education programmes that emphasise empowerment indicate that motivation is much higher among patients who address their own concerns and actively set goals with their healthcare provider. This approach allows patients to be independent and problem-focused, enabling the development of effective self-care behaviours (Funnell et al, 2005).

Trans-theoretical model

The use of the trans-theoretical model (TTM) of behaviour change can assist the DSNIC in

providing the most appropriate support and information based on a patient's readiness for change and his or her level of confidence to engage in the behaviour, e.g. smoking cessation, increased physical activity and eating healthy foods. If the patient is not ready to change lifestyle behaviours, the DSNIC accepts his or her decision and offers friendly non-judgemental advice, leaflets and future support. If the patient intends to make changes in the near future, the DSNIC assists him or her to consider specific, measurable, achievable, realistic and timely (SMART) goals while providing support and encouragement with relevant information.

Method

The education session

Diabetes clinics were set up by the practice nurse in the GP practice. During clinics, patients were invited to attend a 45-minute one-to-one education session with the DSNIC. As every patient with T2D had different needs, the education session was adapted to each person's needs. If required, a follow-up session was arranged within 3 months to review any outstanding needs or issues.

The survey

It was decided that 50 patients was a suitable sample size for initial feedback. Randomly-selected patients with T2D were asked to fill in a patient satisfaction survey after their one-to-one education session with the DSNIC had taken place. The survey contained 15 questions: 12 with a Likert-type scale, ranging from 'strongly agree' to 'strongly disagree', to measure levels of satisfaction; and three with yes/no answers. Descriptive answers outlining patients' intentional behaviour changes were also collected.

The survey was conducted over 3 months, from July to September 2017. Completed surveys were placed in sealed envelopes to retain anonymity. The results were inputted into an Excel spreadsheet and percentages were calculated.

Ethical approval was sought from and granted by the local ethics committee.

Results

Patients' responses to the first 11 questions in the survey are given in *Table 1*. All patients agreed or strongly agreed with these statements, with the exception of 2% of patients who neither agreed or

Diabetes review checklist Record results		
HbA1c	Cholesterol	LDL
HDL	Triglycerides	Blood pressure
Weight	BMI	Waist circumference
Retinal screening Date:	Foot assessment Date:	
Kidney function Date checked:	T2 diabetes education Desmond or CODE:	
Personal plan:		

Figure 1. The diabetes passport contains patients' results and a personal treatment plan

Table 1. Patients' responses to the satisfaction survey following the education session (%).

Statement	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	Not discussed or not sure
I have a better understanding about my type 2 diabetes	84	16	0	0	0	0
I got an opportunity to talk about any concerns I have with my diabetes	78	22	0	0	0	0
I have a better understanding of how much physical activity I need to do to keep healthy	80	20	0	0	0	0
I have a better understanding of healthy eating for my diabetes	86	14	0	0	0	0
I have a better understanding of my carbohydrate portion size	74	26	0	0	0	0
I have a better understanding of what HbA _{1c} is	79	19	2	0	0	0
I have a better understanding of my diabetes medication	64	34	0	0	0	2
I was involved in the planning and decisions about my care and treatment	76	22	2	0	0	0
The nurse explained the treatment plan and health advice in a way I could understand	86	14	0	0	0	0
I feel more confident in managing my diabetes	86	14	0	0	0	0
I feel more motivated in managing my diabetes	86	14	0	0	0	0

disagreed with 'I have a better understanding of what HbA_{1c} is' and 'I was involved in the planning and decisions about my care and treatment'.

When asked 'Do you plan to make changes to your diet following the education session?', 94% of participants ticked the 'yes' box. One patient stated the session had 'developed my awareness of carbohydrates and food balance' and others planned changes such as 'eat more oily fish and vegetables', 'check labels' and 'eat smaller portion sizes and stop sweet stuff'.

In response to 'Do you plan to make changes to your physical activities following the education session?', 82% of respondents ticked the 'yes' box. These patients planned to 'do exercises sitting in the chair', 'be more active hourly', 'walk and weights' and 'do at least 30 minutes a day of physical activity'.

Ninety-eight per cent of patients responded positively to the question 'Have you learnt something from the session that can help you with your diabetes management?'. Examples of responses included:

- The importance of healthy eating and physical activity and the impact of not doing these

- It clearly sets out a healthy eating plan and how to manage my diabetes
- Understanding of my medication and how to better look after myself
- I have targets, understand my diabetes better
- Take more control of what I do and seeing my results improve from the last visit
- Greater understanding of HbA_{1c} and what to aim for
- Take care of my cholesterol
- The diabetes passport will help me.

When patients were asked how satisfied they were with the overall experience of the education session, 98% responded that they were very satisfied and 2% were satisfied. Examples of ways in which the session had helped patients are given in *Box 1*.

Discussion

A review of studies looking at diabetes self-management interventions has advocated the usefulness of theoretical models in understanding the cognitive drivers for self-care behaviours. Within the self-management arena, one of the most

commonly used theories is Bandura's (2001) social cognitive theory, particularly the construct of self-efficacy, which can be described as one's belief in one's ability to succeed.

A randomised controlled trial by Wu et al (2011) reviewed the effectiveness of a self-efficacy programme. All 145 participants with T2D received the standard diabetes education programme and the intervention group ($n=72$) received additional efficacy-enhancing counselling sessions that included self-efficacy enhancing skills, self-goal setting and peer support. The scores for efficacy expectations and self-care activities had significantly increased in the intervention group at 3- and 6-month follow-up when compared to the control group.

Mohamed et al (2013) assessed the effectiveness of a culturally-sensitive, structured education programme for the self-management of T2D. The intervention was based on the theory of empowerment. Health educators counselled patients to change their locus of control to an internal one. Patients were helped to help themselves and develop coping strategies to attain self-management skills. The intervention group ($n=125$) showed an improvement in diabetes knowledge (5.9%, $P<0.0001$), attitude (6.56%, $P<0.0001$) and practice (6.25%, $P=0.0001$). By 12 months, the intervention group had greater reductions in HbA_{1c} (-0.55 mmol/L, $P<0.0001$); BMI (-1.70 kg, $P=0.001$) and albumin/creatinine ratio (-3.09; $P<0.0001$) compared with the control group. However, there were no statistically significant differences between the groups with regards to total cholesterol, LDL cholesterol, triglycerides and systolic blood pressure.

The majority of patients in the current study (98%, 49/50) were satisfied with education provided by the DSNIC. The patients reported a better understanding of their condition, diabetes medication, and how much physical activity and healthy eating is needed to keep healthy. Patients also reported feeling more confident and motivated in managing their diabetes.

In a study by Rosal et al (2011), 252 low-income Latinos received group-based intervention containing literacy-sensitive and culturally-tailored interventions. The theory-based intervention targeted patients' diabetes knowledge, self-efficacy and self-management behaviours and was successful in

Box 1. Feedback from participants.

- By attending the session I now know how and why I should be consistently taking my medication and will work to improve this going forward
- After my session, I have decided to stop smoking
- Need to hear all the bad stuff and this is going to motivate me in the future
- Diabetes nurse very good at explaining everything to you and reassuring you can do it
- It makes me think more about organising my food intake as I had slipped back to having too many sweet treats and too much food at each meal
- Very informative and well delivered. Made me aware of my results so far
- Coming up with a plan together gives me incentive to make changes
- First time in 23 years of having diabetes someone has explained it to me in a way I can understand. It is nice to have time to cover many topics to manage my diabetes
- Enjoyed the session, very informative, no rushing and explained everything to ease my mind

producing significant improvements in all three areas.

In this study, the education session provided by the DSNIC put a strong emphasis on patients taking ownership of their diabetes and recognising their ability to self-manage their condition with support from the diabetes nurse specialist. Patients developed knowledge on how to empower themselves to manage healthy eating, with 94% stating that they planned to make changes to their diet and 82% planning to change their physical activities. In diabetes, higher self-efficacy has been associated with better diet (Nouwen et al, 2011), more exercise (Allen, 2004) and other self-management behaviours (Gherman et al, 2011).

The TTM aims to identify where patients are with behaviour change, enhance motivation for patients not ready to optimally self-manage and change behaviour, and maintain behaviour change in motivated patients. After talking with the patient and identifying where he or she is with behaviour change and motivation, the DSNIC tailors the session using suitable interventions. The education session focuses on enriching intrinsic motivation and the resources provided focus on guiding patients to make changes based on an

agreed goal. The patients stated that they got to talk about concerns in relation to their diabetes and were involved in planning and decisions about their care and treatment. A study carried out by Holmen et al (2016) including 151 patients with T2D examined associations between stages of change for physical activity and dietary habits and between stages of change for each behaviour. Higher self-management scores were associated with an increased chance of being in the action phase for both dietary and physical activity change. Research has found a positive association between stages of change in different behaviours. Using a structured interview-based questionnaire in Jordan, Bawadi et al (2012) assessed 737 patients' current stage of change toward six healthy behaviours related to diabetes control: smoking cessation, regular exercise, consumption of five servings or more of fruit and vegetables, decreasing refined sugar intake, reducing saturated fat and self-monitoring of blood glucose. There was a high degree of readiness toward consuming diets with less saturated fat and sugar but a very low degree of readiness for self-monitoring of blood glucose on a regular basis and undertaking physical exercise. Half of the participants were in the precontemplation stage for consuming five or more servings of fruit and vegetables every day. The findings suggest a need for nutritional education and interventions to raise awareness of lifestyle factors influencing glycaemic control among people with T2D. Systematic reviews about the effectiveness of TTM-based interventions within diabetes populations suggest that evidence to support long-term effects is limited (Salmela et al, 2009). More research in this area is still needed.

The DSNIC used a combination of motivational interviewing and teaching techniques to assist with knowledge development and facilitate patient involvement in the planning and review of diabetes care. Chen et al (2012) carried out a randomised controlled trial to assess the effects of a motivational interviewing intervention encompassing a variety of interviewing techniques and reflected readiness to change in 250 people with T2D. Participants were randomly allocated to the motivational interview group or usual care group. At 3-month follow-up, self-management, self-efficacy, quality of life and HbA_{1c} were significantly improved in the intervention group.

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Limitations

This study is the first to use the patient satisfaction survey devised by the DSNIC. It can assist in validating the tool for future use.

The DSNIC developed the diabetes education session checklist and diabetes passport out of an identified need for resources. To date, neither have been validated.

The positive results from this study were captured immediately after the diabetes education session. It is difficult to determine whether these positive effects are maintained 3–6 months later and thereafter. A follow-up comparative study with these patients would be worthwhile to determine whether positive behavioural changes are embedded into their lives, as patients may need ongoing reinforcement and support to achieve lasting behavioural changes.

Conclusion

In the management of diabetes, knowledge alone is insufficient to promote behaviour change. Successful living with diabetes depends on the patient's ability to self-manage their condition through informed decision-making, take responsibility for self-care, have the motivation to make changes, be involved in their care plan and feel supported in the process. The diabetes education session needs to be patient-centred and tailored to an individual's educational needs, preferences and values to support diabetes self-management. ■

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