

# Barriers to implementing change within diabetes care

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## ABSTRACT

**Background:** Patients diagnosed with diabetes are encouraged to make multiple lifestyle changes to manage their condition. This includes modifications to diet, exercise, medication and medical appointment requirements. Many patients struggle to undertake the changes that are asked of them, leaving themselves and their medical practitioners frustrated by the lack of change or progress. This places patients at risk of developing a multitude of complications.

**Aim:** To examine the literature and identify possible barriers to treatment that exist for patients recently diagnosed with type 2 diabetes in the adult population.

**Method:** A literature review of barriers to diabetes treatment and care, and how to resolve those barriers, was conducted during September 2013.

**Results:** Multiple barriers to the treatment and care of diabetes from both the patients' and medical practitioners' perspective were found. Barriers to implementing care included financial barriers to medication, barriers to accessing services and knowing when and who to consult/refer to.

**Conclusion:** Existing barriers may be rectified with greater access to services, understanding of referral requirements and further practitioner/patient education. The critical areas of education identified for both the patient and health care provider are understanding the disease process and how different treatment plans and patients' choices affect the patients' lifestyle and health outcomes.

## INTRODUCTION

Diabetes has become a costly problem within the global health system, with an estimated US\$548 billion spent worldwide on the suspected 382 million people who suffered from the disease in 2013. Australia currently spends an estimated \$3,000–\$6,500 per person per year<sup>1</sup>. Diabetes is a complex chronic disease that can result in multiple neurovascular complications; mortality due to diabetes and its complications is equivalent to one death every six seconds<sup>1</sup>. Prevention of neurovascular complications is vital in preventing deaths and costs associated with the disease. Because of this, patients are asked to manage their diabetes via tight glucose control, dietary changes and lifestyle modifications<sup>1</sup>. These changes include increasing exercise, incorporating dietary changes, attending a greater amount of medical appointments and adhering to medication regimes and changing daily habits to include regular blood glucose testing and monitoring. Many patients do not meet the new lifestyle changes imposed on them<sup>2</sup>.

The aim of this paper is to determine what barriers are evident to prevent patients making lifestyle changes, and how to resolve those issues so that patients can manage their diabetes in an effective manner that will satisfy themselves and their primary practitioners. Qualitative design methods were used in the articles reviewed for this paper. Qualitative methods use surveys, interviews and observation to find themes as to why there are barriers to effective diabetes care. The papers reviewed incorporate results from both practitioner and patient interviews and surveys<sup>3</sup>.

## METHODS

A search was conducted in September 2013 of Ovid, Cochrane Library, Medline, CINAHL and evidence-based medicine online to find papers relevant to the barriers faced by patients and practitioners to their diabetes care. The aim of the search was to find papers that qualitatively described the barriers that both health providers and patients faced in relation to their diabetes care and education, and to gain a greater understanding of how those barriers resulted in patient discontent. Searching included text words such as 'diabetes', 'diabetes and change', 'diabetes education', 'diabetes and glucose control' and 'diabetes and barriers to change'. Reference lists of papers were also searched to find applicable research. Searching within the Cochrane Library MeSH terms (diabetes) returned nearly 8000 papers. This was further restricted to results of human trials, English language, type 2 diabetes only and 2004 to present day papers only, which narrowed the scope to 50 papers. These were then further narrowed down to find papers that dealt with barriers to the care of patients with type 2

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diabetes mellitus and their health practitioner(s) and four papers were left. Papers were excluded if they were not available in English, did not relate to barriers of care, involved chronic conditions other than type 2 diabetes mellitus (other forms of diabetes were also excluded), subjects that were not adults and those that developed quantitative data to ensure an understanding of how and why barriers are evident.

## RESULTS

Qualitative studies have been used to decipher what barriers are in place for patients to receive diabetes care. Several of the articles in this literature review questioned practitioners regarding their thoughts on barriers to change<sup>4,8</sup>. General practitioners (GPs) found that affordability of care<sup>6</sup>, limited resources, inappropriate follow-up regimes<sup>7</sup> and stigmas surrounding the disease<sup>5</sup> were the main reasons for barriers to care for patients. Secondary to these reasons, patients were deemed non-compliant in relation to their lifestyle changes to improve their diabetes care<sup>4</sup>.

Practitioners found that implementing change into patients' lives requires education for the patient relating to their disease and support for the patient from their family and medical staff, for example diabetes nurse educators (DNE), GPs and dietitians<sup>7</sup>. When creating education sessions or appointments for patients with diabetes, educators and dietitians, practitioners (mostly GPs) noted a lack of guidelines on when to refer to colleagues and how often patients were to see external diabetes specialists and allied health practitioners<sup>6</sup>. In conjunction to a lack of diabetes care guidelines, it was also noted that practitioners have insufficient time to adequately assess patients with diabetes, and have a lack of education themselves regarding appropriate treatment plans and referral systems<sup>6</sup>.

Practitioners also highlighted the need for the patients' family members to be educated in their disease. This was especially relevant in ethnic minorities where cultural demands may dictate a particular type of dietary intake or times when food is/is not able to be ingested. This was closely linked to reporting of patients' stigma associated with diabetes<sup>5</sup>. Reports of patients unwilling to make changes because of the stigma of monitoring blood glucose levels (BGLs), requiring dietary changes including regular meal breaks at work and exercise changes frustrated practitioners as patients were deemed unwilling to change or non-compliant<sup>4</sup>.

Two papers highlighted the need for low-cost health care and medication regimes because often patients were unable to access health care due to associated financial costs<sup>5,8</sup>. Financial strain on patients sometimes prevented them from pursuing health care follow-up and medication prescriptions<sup>8</sup>. This obviously impacts greatly on the general health of the patient in review of their glucose control and management of other comorbidities<sup>2</sup>. In conjunction with financial costs, decreased motivation also prevented patients from accessing health care providers<sup>8</sup>. Practitioners saw adhering to medication regimes and dietary requests as their priority. However, for patients this was not the case; instead their priorities were more closely aligned to maintaining employment and not being seen by co-workers and family as sick<sup>5</sup>.

Seven articles reported on patients' barrier to care. Interviews and observations were conducted to gain the patients' perspective of why they are seen as 'unwilling' or 'non-compliant' in their diabetes care<sup>8-10,12-14</sup>. Patients reported some similar barriers to health as the practitioners — lack of access to health care<sup>9,13</sup>, financial strain<sup>11</sup> and a lack of education to cope with or understand the changes asked of them<sup>10</sup>. However, there were some differences from the patients' perspective. For instance, some patients found that practitioners forced their priorities for care onto the patient without considering the patients' priorities<sup>11</sup>, others noted a lack of education<sup>12</sup> and assumption and expectation of change<sup>13</sup>.

In multicultural areas language was seen as a barrier of care. Education regarding diabetes and how to prevent complications was severely hindered because of the language barrier<sup>12</sup>. Education in areas where the language barrier was removed was also seen as inadequate from the patients' perspective; patients complained of being told how to control their diabetes and complications rather than being exposed to education about the disease and techniques to change areas of their lifestyle<sup>11</sup>. Patients also reported they wanted training in diabetes care and how it will affect their lives. They found that practitioners were more interested in telling rather than educating<sup>10</sup>. Patients also requested education on their diabetes medication and how that will interact with their other medications. Requests for group support and family education were also noted as a barrier to change due to a lack of support from family and workplaces<sup>5</sup>.

Alongside education, patients complained of a lack of collaboration between practitioners and patients as well as too big a change being asked of them<sup>13</sup>. Patients noted that practitioners requested instant changes to diet, exercise and health care needs when it was not plausible for the patient to do so<sup>13</sup>. This incorporated a need for discussion regarding patients' and practitioners' goals of health care; patients found that this differed significantly on how they thought they could implement changes that will be beneficial to their health<sup>13</sup>. Patients also admitted that although they may be educated about their diabetes and aware of the implications of poor diabetes care, the patients themselves were sometimes unwilling to change<sup>11</sup>. Unwillingness to change was often linked to comorbidities such as depression<sup>14</sup>.

Comorbidities to diabetes are seen as a large obstacle to optimal diabetes care: depression is common amongst diabetes sufferers and can inhibit motivation to change; patients who suffered from both depression and diabetes found changing and implementing lifestyle changes asked of them very difficult<sup>14</sup>. As well as depression, some patients resigned themselves to the complications of diabetes without trying to prevent them<sup>9</sup>; this may present itself as a lack of motivation to change to practitioners. A lack of motivation, whether it is due to depression or to patients resigning themselves to the complications of the disease, also creates simple barriers to self-care. Patients reported not wanting to take simple steps in their self-care to prevent complications, like daily foot checks<sup>12</sup>. This is closely linked to low self-esteem noted by many patients as a barrier to self-care modalities<sup>12</sup>.

Table 1: Summary of papers reviewed

Paper	Methods	Results/Barriers	Limitations of the paper	Recommendations
Chin <i>et al.</i> , 2010	Survey of health practitioner relating to their barriers to providing diabetes education in the Midwest of America. Surveys were sent to 389 health practitioners and administrators — 72% response rate.	Respondents noted that they believed they were better at advising on the changes needed rather than educating on how to change areas. Health providers also noted cultural differences and the language barrier as barriers to care.	Questionnaires included questions that may be applicable to only health providers or administrators, not both.	Greater education in behaviour change for practitioners to encourage change in their patients.
Fukunaga <i>et al.</i> , 2011	Focus groups of 74 employed adults in Hawaii. Volunteers were found through newspaper advertising or word of mouth. Focus groups ranged from 1 to 7 participants with 4 participants being the average group size.	Participants noted they felt they had to hide their diagnosis for fear of social judgement, and the inconvenience of having to plan meal times, monitor BSLs and a lack of understanding from family and friends.	Participants were employed and more likely to be motivated to change lifestyle factors in relation to their diabetes.	Greater social awareness of the disease and its complications, as well as the need for social, physical and emotional support for those suffering from diabetes.
Goderis <i>et al.</i> , 2009	One-on-one interviews with 20 general practitioners to promote high-quality diabetes care via the Quality Improvement Program.	GPs found that using a structured program to help facilitate care with their diabetic patients improved their confidence in relation to starting insulin or referring on to other practitioners.	Participants in the study were interested in the study area, possibly creating bias in wanting to 'please' researchers. Interviewer bias may also have been present.	Limitations continue to exist with ongoing resistance to change and access to services such as an educator to increase patients understanding and the GP's ability to care for their patient.
Siriwardena <i>et al.</i> , 2008	Semi-structured interviews were held involving health practitioner participants in educational programs across the United Kingdom. The Lincolnshire Target aimed at educating health practitioners, nursing staff and administrators in providing diabetes care education.	Greater understanding of the role of medication in the treatment of diabetes was noted. Diabetes nurse educators were encouraged to take the lead in providing diabetes education to patients. Written information for patients led to empowerment of the patient; however, some GPs noted that this had already occurred with easily accessible internet.	Those working in clinics with an interest in diabetes were chosen to participate, leading to the possibility of increased knowledge of the disease and links to other health practitioners to facilitate multidisciplinary care.	Encouraging collaboration and teamwork amongst patients and all health care providers involved in the patients' care decreases barriers to care.
Morie <i>et al.</i> , 2011	Review of papers that have utilised virtual technology in the treatment of veterans with mental health issues and chronic diseases, including diabetes.	The use of virtual technology such as online support group improves outcomes in relation to behaviour change including weight loss and dietary changes.	Review of the technology only does not gain insight from patients or practitioners in the ease of use or compatibility to an older audience	Virtual support networks decrease barriers to behaviour change.
Gabbay <i>et al.</i> , 2010	Summary of motivational techniques for implementing patient change.	The use of motivational techniques to encourage behavioural change increases patients' understanding of their diabetes and incorporates patient-practitioner collaboration.	Does not advise on which patient populations this technique is best used with.	The use of open-ended questions, patient-practitioner collaboration and encourage intrinsic change.

Table 1 (continued): Summary of papers reviewed

Paper	Methods	Results/Barriers	Limitations of the paper	Recommendations
Koenigsberg <i>et al.</i> , 2004	Suggested coaching approach to be used by health practitioners to motivate change in patients in relation to their diabetes care. Change is to be implemented in a 'step by step' process; therefore, address one aspect of care at a time.	Positive changes in behaviours towards lifestyle factors of diabetes improves outcomes. Techniques include motivational interviewing, empowerment of the patient, individualised plans, self-monitoring and treatment planning.	It is unclear how many techniques improve outcomes, or how long each change technique needs to be implemented for before permanent change occurs.	Behavioural change is possible — multiple techniques are available to the health practitioner, using one technique at a time is advised.
Ruelas <i>et al.</i> , 2009	Randomised, prospective, observational study following 162 Latino patients for two years. Financial barrier to obtaining medication was removed by supplying the medication for free.	Medications were available for free at the same centre where the participants received their diabetes care. This improved outcomes such as HbA1c in the participants; this was significant compared to the control group.	Adherence to the medication regime at home was assumed when participants obtained their medication.	Removal of the financial burden in relation to medication improved some outcomes (HbA1c) but unclear if adherence was any greater.
Rustveld <i>et al.</i> , 2009	Six focus groups were conducted: three in English and three in Spanish, to determine lifestyle changes in Hispanic men diagnosed with type 2 diabetes.	A lack of skills and will power was identified within the group in relation to how to incorporate dietary and activity levels as well as incorporating culturally appropriate lifestyle changes. Not incorporating change into their lives was not also intentional. Many also noted their decreasing self-esteem with being diagnosed with the disease.	Women were not included in the study. All participants were Hispanic, limiting generalisation to the greater population.	Education should highlight diabetes is not a fatalistic disease as well as being culturally appropriate. Attempts to improve the self-esteem of those diagnosed should also be made when educating patients.
Funnell, 2004	Review of strategies available to ensure practitioners are able to provide appropriate education so that patients can administer informed self-care on a day-to-day basis.	Collaborative approach to diabetes care and education from all health practitioners and patients together decreased barriers to care and enabled the patient to make informed decisions including the use of such tools as a care plan consisting of goals and objectives of care. Communication between health practitioners is also important to ensure the same education is being provided.	Review of literature to date only.	Collaboration with the patient to ensure ongoing assessment of self-management, behaviour and knowledge. To also ensure personal goals are set and individually tailored strategies to achieve goals are put in place.
Naranio <i>et al.</i> , 2011	Study followed 338 adults with major depressive disorder for an 18-month period to ascertain predictors of depression; participants received three assessments over the 18-month period.	Although there is a correlation between chronic disease and depression, those patients with type 2 who show depressive symptoms may also be undergoing other life stressors.	A modest sample size decreases generalising to the greater population.	An holistic approach to managing depressive symptoms is needed, although the depressive state maybe due to stress/complications of diabetes, it may also be unrelated to a diabetes diagnosis.

Accessing services was seen as a considerable barrier to care for patients. Financial restraints as well as geographical distances prevent patients from seeking the treatments and medications they need to prevent further complications<sup>6</sup>. Patients requested low-cost medications and medical appointments so they could adhere to medication and attend appointments<sup>8</sup>. Patients also highlighted the need for a primary medical practitioner to refer and correspond with other linked practitioners and manage their overall health care<sup>7</sup>. This was a considerable barrier for patients in accessing health care providers for their diabetes management and care<sup>7</sup>.

## DISCUSSION

Multiple barriers to care were identified in these 10 articles, many of which were identified by both practitioners and patients alike — problems with patient education<sup>6,12</sup>, access to health care<sup>5-9,12</sup> and implementing change<sup>3,4,11</sup> were identified by both groups. Other barriers included practitioner education<sup>6</sup>, inadequate time for appointments and assessments<sup>6</sup>, comorbidities<sup>10</sup>, diet and exercise barriers<sup>12</sup> and self-motivation<sup>14</sup>.

To enable change within the practicalities of diabetes care is, in many respects, a challenge. Changing practitioners' attitudes towards providing education to patients and how that education is provided may be difficult. Practitioners must implement strategies, such as using open-ended questions when asking patients about their diabetes and lifestyle habits, since this will provide information for practitioners to facilitate education sessions relative to gaps in patient knowledge<sup>4</sup>. Incorporated into patient education, education for family and the patient's support network can be implemented into education sessions<sup>6</sup>, as well as utilising interpreters when needed. Increasing access for practitioners to be able to attend educational sessions regarding the delivery of diabetes education and complications would also benefit patients to ensure appropriate delivery strategies are in place to improve patient outcomes<sup>7</sup>. Strategies such as collaborating with patients and devising a timeline of goals for diabetes care will also establish patient/practitioner priorities and a timeline for implementing changes to establish long-term diabetes care, including the use of online technologies<sup>9</sup>. This collaboration will also ensure that the practitioner and patient can compromise on events that may be culturally significant to the patient, but require deviations from proposed dietary changes<sup>5</sup>.

Not only is there a need for patient and practitioner collaboration but also practitioner and practitioner collaboration; practitioners that present different advice and education may confuse the patient as to which advice should be followed. To decrease the risk of confusing information, the use of electronic educational systems have been highlighted as a way to provide patient-specific education. This requires patient characteristics to be applied to the computer-based system to create a specific education output; however, as noted in the research this requires further testing and research to determine if it is appropriate<sup>15</sup>. In this situation trust is also built between practitioner and patient (or multiple practitioners and their patient), creating an environment of openness and one where the patient is more likely to be honest and the practitioner

more likely to be understanding about deviations from the implemented changes<sup>16</sup>.

Education for practitioners on diabetes care should also incorporate education on the benefits of multidisciplinary teams in the care of patients with chronic conditions<sup>17</sup>. Patients remarked that they may not have a primary care who will refer on when needed<sup>12</sup>. This may be due to a lack of understanding on behalf of the practitioner for the need of this or a feeling that the practitioner may lose the patient<sup>8</sup>; however, multidisciplinary team approaches to chronic diseases care have been shown to decrease diabetes complications<sup>17</sup>. The use of multidisciplinary clinics for treating high-risk patients for diabetic foot ulcers is well documented in the literature<sup>18</sup>; however, the use of such clinics may also be warranted to ensure the patients are receiving one consistent educational message. This may include the use of groups to provide education to patients about all facets of their diabetes care, which have been shown to improve diabetes outcomes<sup>19</sup>, and may lead to a decrease in conflicting information received by patients. Group medical visits and group visits for patients and practitioners, have been shown to decrease HbA1c levels in patients with diabetes; however, it was unclear if this would lead to other positive patient outcomes in relation to their diabetes care due to a lack of evidence<sup>20</sup>.

Additionally, barriers from the practitioners' perspective can be reduced by increasing resources available to the practitioner to provide effective care. This may incorporate DNE and dietetics reviews in the practice setting, decreasing cost to patients for medical appointments, such as bulk billing and enhanced primary care plans, and discussing implications of not adhering to medications as well as interactions and adverse reactions of medications<sup>8</sup>.

Changes to patient obstacles to care will require changes to treatment of comorbidities<sup>10</sup>, increasing accessibility to services<sup>13</sup>, including out-of-hours appointments, decreasing language barriers<sup>12</sup>, greater supportive education<sup>4</sup>, and increasing motivation amongst the patient group<sup>11</sup>. Trials in Australia are currently under way for electronic health records (ehealth) with the aim to increase patient/practitioner accessibility to patient records and create a central base for patient information; however, the uptake of this has so far been low, impeding perceived positive outcomes<sup>21</sup>. Whether or not electronic records could be used in conjunction with creating patient-specific educational tools as mentioned above remains to be seen.

Patients with diabetes often have comorbidities such as depression, which can impact on a patient's willingness or motivation to change and implement strategies to encourage good diabetes care<sup>14</sup>. Treatment of comorbidities, either by medication or referral to an appropriate medical provider, will provide the patient with coping strategies to maintain a healthy lifestyle<sup>4</sup>. Strategies the primary practitioner can use, as mentioned above, can include collaborating on treatment plans for implementing strategies and allowing for culturally significant events. As patients discussed, the need to be included in their health care planning by collaboration will enable compromise and produce outcomes that were agreed upon by all involved<sup>13</sup>.



Increasing accessibility to health care services is difficult to obtain. The use of a multidisciplinary clinic enables the patient to be able to access diabetes care providers in one place at one time, thus enabling them to see their endocrinologist, DNE, dietician and podiatrist together<sup>17</sup>. This information is easily relayed to the patient's GP or primary practitioner to increase communication between practitioners and provide greater holistic care to the patient<sup>17</sup>; the long-term goal of ehealth records would also be of benefit in this situation. However, this may not decrease the financial strain placed on patients in relation to the cost of medical appointments and medications. Financial strain on patients may be decreased by accessing bulk billing clinics, the aforementioned enhance primary care plans, accessing the public health sector, or if patients are eligible for the Pharmaceutical Benefits Scheme (PBS); however, this may come with long waiting periods depending on the care that is required.

These changes mentioned here are aimed at creating long-term diabetes care that is effective and reduces long-term complications. The use of multidisciplinary clinics, patient and family support education and practitioner-patient collaboration on common goals will ensure barriers to diabetes care are diminished.

## CONCLUSION

There are many barriers to effective diabetes health care: some are practitioner-orientated (delivery of diabetes education and information is presented to the patient); some are patient-related (accessing services); and some require improvement and compromise from both (creating an effective, shared treatment plan and treatment goals). Identification by both health practitioners and patients of the barriers that apply will enable them to improve their education and care strategies, whether that be the addition of a DNE to the practice setting or referral to a local group education/multidisciplinary team or creating greater support networks for the patient. The use of a collaborative approach by the health practitioners involved in patient care is one area that may still require further research and implementation to establish the methods best suited to this approach. This will lead to the creation of effective care plans for the decreasing conflicting and confusing advice to patients and ensure patient-specific advice. Improvement in these areas will hopefully lead to a change in diabetes care that prevents diabetes complications for the patient.

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