

Behavioural innovation is key to improving the health of one million Australians living with type 2 diabetes

Policy, research and clinical practice need a paradigm shift, focused on human behaviour and psychology

More than 1.1 million Australians have diabetes, about 85% of whom have type 2 diabetes (T2D).¹ Just one in four adults with diabetes in primary care has a glycated haemoglobin (HbA_{1c}) value in target range ($\leq 7\%$, 53 mmol/mol), which is important for minimising the risk of devastating long term complications.² Diabetes costs Australians \$14 billion per annum and is likely to cost \$30 billion per annum by 2025.¹

Albert Einstein is credited with defining insanity as “doing the same thing over and over again and expecting different results”. Regardless of the provenance of this saying, diabetes care in Australia is in danger of being overcome by this basic behavioural error. Beyond the laudable search for a cure, most diabetes research continues to focus on developing and trialling new medicines and technologies, while clinical practice focuses on screening for complications and prescribing. Now is the time for a paradigm shift to focus on how human behaviour and psychology can inform policy and practice to improve the health and lives of one million Australians.

In 2010, Diabetes Victoria and Deakin University established the Australian Centre for Behavioural Research in Diabetes (ACBRD). Its first task was to undertake the largest, most comprehensive study of the psychological and behavioural aspects of diabetes ever conducted in Australia: 3338 adults with diabetes (59% with T2D) reported their self-care, health beliefs and emotional health.³ The Diabetes Management and Impact for Long-term Empowerment and Success (MILES) study has placed these issues on the national agenda, offering a road map for how we can improve Australian outcomes.

Many people struggle to manage diabetes with lifestyle alone

Given the health behaviours of the nation overall,⁴ it is no surprise that one in five Diabetes MILES respondents with T2D reported that they never or infrequently ate healthily, while two in three did not engage in sufficient physical activity.³ For most people with T2D, medications are prescribed only after lifestyle measures alone have proven inadequate to achieve an optimal HbA_{1c} level. Therefore, it is clear that we need a more concerted effort on sustaining a healthy lifestyle. In Victoria, the state government funds an evidence-based prevention program to support those at high risk of T2D, heart disease and stroke.⁵ It is illogical that there is no national program to support people with diagnosed T2D in

making lifestyle changes to avoid costly medications and to engage them in improving their health and quality of life.

Many people do not take medications as recommended

On average, 50% of medications for chronic conditions are not taken as prescribed.⁶ Diabetes MILES showed that medication costs were a barrier for 51% of respondents,³ which may reflect the inverse socio-economic gradient for T2D. Greater economic hardship is associated with suboptimal self-management of T2D, but other factors explain the association.⁷ Being employed is associated with suboptimal taking of medication and less frequent self-monitoring of blood glucose,⁷ which may reflect the complexities and conflicting demands of managing diabetes in the workplace. Other studies have shown that people with diabetes feel stigmatised,⁸ suggesting that optimal diabetes self-management in the workplace may be impaired by a desire to conceal the condition.

Structured self-monitoring of blood glucose is effective for increasing the visibility of blood glucose patterns to the individual and increasing their engagement with lifestyle changes and medication taking.⁹ Likewise, a Cochrane review indicates that showing and explaining medical imaging results can be effective in motivating health behaviour change.¹⁰ Yet, from 1 July 2016, the government is restricting glucose-testing strips for patients with diabetes who are not yet using insulin.⁹

Some people are reluctant to intensify their medications

Despite its proven efficacy for reducing hyperglycaemia, insulin is less popular than oral medication among adults with T2D. Corroborating international findings, about one in four Victorian adults using oral medications are unwilling to use insulin if recommended.¹¹ In Diabetes MILES, three in four respondents with non-insulin-treated T2D endorsed the benefits of insulin: maintaining optimal glucose levels, preventing complications and improving health.¹² However, negative appraisals are also common, with 63% of respondents concerned that “taking insulin makes life less flexible” and 62% reporting that “taking insulin means I have failed to manage my diabetes”.¹² Moreover, such concerns are more evident among those with greater diabetes-specific distress.¹²

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The burden of diabetes self-management is associated with considerable distress

One in five Australians with T2D experience severe diabetes distress.¹³ The topmost problems are “worrying about the future and the possibility of serious complications” and “experiencing feelings of guilt and anxiety when diabetes management goes off track”.³ This suggests that, far from being apathetic or unmotivated to manage their diabetes, many people overestimate their risk of long term complications and feel burdened and unsupported trying to manage a complex, unrelenting condition. A pilot study shows that intervening with actual, personalised risk profiles and counselling is feasible and that it has the potential to reduce risk overestimation, HbA_{1c} levels and diabetes distress.¹⁴

Behavioural insights provide a guiding compass

As Charles Everett Koop remarked, “the drugs do not work in patients who do not take them”. Labelling this as “non-compliance” misses the point. Indeed, when the current treatment regimen appears ineffective, the typical solution is to prescribe a cumulative medication cocktail to optimise HbA_{1c} levels. Yet, this just ignores the underlying problem and increases the regimen burden (and costs). In the end, the main reasons why people do not take (or are reluctant to intensify) their medicines as recommended are not the costs or perceived lack of benefit. Rather, their concerns about medications outweigh their belief in the need for them, and self-management demands conflict with other motivational factors (eg, a desire to avoid stigma). Beliefs are malleable and burden can be reduced, yet the government accepts rising pharmaceutical and complications costs rather than investing — like the United Kingdom has done — in national structured diabetes education programs.¹⁵ Such programs have proved to be effective in changing health beliefs, addressing burden and distress, and engaging people in their diabetes care.¹⁵

The National Diabetes Strategy: reality or rhetoric?

In November 2015, the federal government released the Australian National Diabetes Strategy 2016–2020¹ and its timeliness cannot be denied. An encouraging feature is that behavioural and psychological aspects of diabetes are acknowledged. It is disappointing, however, that the language is vague and somewhat passive: “potential areas for action” are to be “considered” and “explored”. In addition, there is no implementation plan or allocation of dollars.

Among the potential areas for action, the Strategy recommends to “enhance access to structured self-management education programmes, including the newly diagnosed and people starting insulin” and to “ensure that peer support programmes (either face-to-face, telephone or online) are accessible”. Serious investment is needed to achieve both of these, although it should be noted that they are much less expensive (and likely more cost-effective) than oral or injectable medications. Moreover, while social isolation is as

damaging to overall health as smoking 15 cigarettes per day,¹⁶ it is strangely unlikely that scalable national intervention to increase social attachment (eg, peer support) would receive a similar level of investment as tobacco control.

The Strategy also indicates to “routinely monitor people with diabetes for mental health issues”. The forthcoming National Diabetes Services Scheme handbook for health professionals, which I have co-authored, provides practical strategies and tools for identifying, monitoring and addressing emotional and mental health issues among people with diabetes. In addition, accompanying information sheets will be available for people with diabetes.¹⁷ However, this is just the tip of the iceberg in terms of the training needed, as many health professionals perceive they do not have the skills, confidence or time to provide this support.¹⁷ In its recent Budget, the federal government allocated \$33 million to fund a national diabetic retinopathy screening program — only time will tell if there will be a similar investment in a national diabetes mental health screening program.

Is behavioural diabetes research on the horizon?

The final goal of the National Diabetes Strategy is to “strengthen prevention and care through research, evidence and data”.¹ While spending on diabetes care is estimated to be \$14 billion per year and increasing annually,¹ only \$0.36 billion has been invested in diabetes research in the past 5 years.¹⁸ This woeful under-investment, especially compared with cancer and cardiovascular disease,¹⁸ is a looming national disaster, given that diabetes was predicted in 2010 to become the leading cause of disease burden in Australia from 2017.⁴ Moreover, behavioural and psychological research attracts a minute fraction of the diabetes funding pool each year, arguably less than 2% in the 2015 funding round. Thus, there is negligible investment in developing, trialling and implementing the behavioural insights that can improve self-management and the physical and mental health of people with diabetes.

The UK has recognised the need for behavioural innovation. In the 5 years since the UK government funded the Behavioural Insights Team to innovate around its most complex and challenging problems, over 80 staff have run more than 150 randomised controlled trials in most areas of policy (not only health), typically finding better ways of doing things, and delivering successful results.¹⁹ David Halpern, Chief Executive Officer of the Behavioural Insights Team, recently completed an engagement as inaugural Leading Thinker at VicHealth, and his report summarises the EAST (easy, attractive, social, timely) behavioural framework at the heart of many effective interventions.²⁰

The road ahead ...

Almost any intervention designed to improve T2D outcomes relies on engaging patients in their self-care. As noted above, national structured diabetes education and peer support programs have significant potential to improve outcomes, as they combine behavioural

techniques to address beliefs, burden and distress. Informed by our exploratory research, the ACBRD is now developing and evaluating behavioural interventions to increase receptiveness to treatment intensification, increase eye screening uptake using tailored messaging, reduce diabetes-specific distress, decrease stigma associated with diabetes, and equip health professionals with the tools and skills to support people with emotional health problems. However, much more is needed.

Some might argue that the current economy means that we cannot afford new investment in innovation. But how can we not, when T2D outcomes are not improving and health care costs are spiralling? To continue as we are now would be the definition of insanity. We need a paradigm shift to improve the long term physical and mental health of people with diabetes. The current focus of diabetes research and clinical practice on medicines and technologies, without

investment in understanding and changing human behaviour and providing psychological support, is akin to beginning a long journey without a map or a compass.

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