

What do we Know about Health Literacy and Diabetes Care, and What does this Mean for Aboriginal and Torres Strait Islander Peoples with Diabetes?

SEAN TAYLOR

*BNS, RN, GradCertDiabEdM
Honors Student, School of Health Sciences
University of South Australia*

PROFESSOR ROBYN McDERMOTT

*MBBSM FAFPHM, MPH, PhD, Director SA/NT Data Link
Epidemiology and Population Health Sansom Institute
for Health Research University of South Australia*

Background

Diabetes Mellitus has emerged as a worldwide public health problem which has been well documented within our communities. Type 2 diabetes is the most common form of diabetes, estimated to account for 85–90% of diabetes¹. More than 700,600 Australians of all ages had been diagnosed with diabetes in Australia² and 83% is Type 2 diabetes. Aboriginal and Torres Strait Islander people have markedly higher rates of type 2 diabetes. Torres Strait Islanders in north Queensland have the highest prevalence of type 2 diabetes in Australia, with about a third of adults affected³ and incidence of diabetes and other co-morbid conditions are extremely high among Indigenous Australians and preventable chronic disease account for more than 60% of the 13–17 year life expectancy gap for Indigenous people in Australia⁴.

Rural and remote communities are further disadvantaged by reduced access to Primary Health Care providers⁵. Many of the complications associated with diabetes can be reduced with appropriate community based primary health care interventions⁶.

Health Literacy

Health literacy is fundamental if people are to successfully manage their own health. This requires a range of skills and knowledge about health and health care, including finding, understanding, interpreting and communicating health information, seeking of appropriate care and making critical health decisions⁷. Schillinger et al (2002)⁸ describe health literacy as a constellation of skills and patients with poor health literacy have difficulties that range from reading labels on pill bottles and interpreting blood sugar levels or dosing schedules to comprehending appointment slips, education brochures, or informed-consent documents. Inadequate health literacy may contribute to the disproportionate burden of diabetes-related problems among disadvantaged populations. Patients with low health literacy skills are more likely to have poor understanding of their chronic disease, worse disease self-management skills, worse self-reported health status, and greater likelihood of hospitalisation due to poor self-management skills⁹. Nath (2007)¹⁰ claims that people with diabetes who have low literacy may lack the skills to accomplish such tasks and find it difficult or impossible to access and understand health care information and instructions, or to implement recommended behaviours due to the complexity of diabetes regimes, layered barriers of language, culture, and health care systems that are difficult to navigate, the burden of self-care can be overwhelming to someone with inadequate literacy. This may be a greater problem for Indigenous than non-Indigenous people with diabetes in Australia. However, Quirk (2000)¹¹ describes patients with low literacy who are hesitant to admit they have difficulty reading and many have developed a variety of methods for concealing their illiteracy from friends, family, and spouses. Illiteracy carries a stigma and generates feelings of inadequacy, fear, and low self-esteem¹². Health literacy can be measured using a tool developed

by Baker and others¹³, the development of an abbreviated version of the Test of Functional Health Literacy in Adults (TOFHLA), which measures patients' ability to read and understand health-related materials. The TOFHLA was reduced from 17 numeracy items and three prose passages to four numeracy items and two prose passages – Short form TOFHLA (S-TOFHLA), taking 22 minutes to administer. TOFHLA is a practical measure of functional health literacy with good reliability and validity that can be used by health educators to identify individuals who require special assistance to achieve learning goals.

Health literacy and Glycemic Control

Glycemic control is measured by glycosylated haemoglobin concentration (HbA1c) and is an important indicator of overall diabetes management. One of the primary goals of therapy is to achieve HbA1c levels as close to normal (<7%) as possible (American Diabetes Association 2009). Poor glycemic control is associated with accelerated declines in microvascular and macrovascular function leading to eye, renal disease and neuropathy and also heart disease and stroke.

People with diabetes require knowledge in order to succeed in self-management activities, where knowledge of diabetes is defined as general information about diet and exercise, targets for diabetes management and outcomes¹⁴. A cross-sectional study performed in the USA, suggested that poor literacy is associated with poor glycemic control and lower literacy was common among African Americans, older patients, and patients who required medication assistance¹⁵. Another study⁸, examined the association between health literacy and diabetes outcomes, among patients with Type 2 diabetes. This cross-sectional study of 408 English and Spanish speaking patients (Asian, Black, Latino and White) using s-TOFHLA in English and Spanish concluded that patients with inadequate



Health workers working in a community-based setting.
© M. Ndhovu and TARSC 2008

health literacy were less likely than patients with adequate health literacy to achieve good glycaemic control and were more likely to report having retinopathy.

One study¹⁵ examined the impact of a pharmacist-led diabetes management program for 159 patients with Type 2 diabetes and poor glycaemic control. A clinic-based pharmacist offered one-to-one education and medication management for these patients using techniques that did not require high literacy. The study concluded that a diabetes care program, which used individualised teaching with low literacy techniques, significantly improved Glycaemic control. Another US-based study¹⁶ explored the relationship between health literacy, patients' readiness to take health actions, and diabetes knowledge among individuals with Type 2 diabetes from a diverse background which included 62% African Americans and 37% non-Hispanic whites. This study concluded that patients with lower literacy levels had haemoglobin A1c levels 1.21% to 1.36% higher than those with higher literacy (literacy level greater than or equal to the ninth grade as measured by the Rapid Estimate of Adult Literacy in Medicine (REALM) score. Another US study examined educational attainment, literacy using the s-TOFHLA and glycaemic control (HbA1c) in 395 Type 2 diabetics in a US public hospital and showed that in a low income population with diabetes, literacy mediated the relationship between education and glycaemic control¹⁷. Mancuso suggests that, along with health literacy, patient trust in the health care provider is a significant determinant of successful self management, including glycaemic control¹⁸. The relationship between health literacy and glycaemic control in Aboriginal and Torres Strait Islanders with diabetes has not been studied. Given the importance of glycaemic control for favourable outcomes in diabetes care, the high prevalence and incidence of diabetes and complications among Indigenous Australians coupled with

generally low formal education levels in this population, it is important to understand these relationships and how they can inform different approaches to diabetes care.

Diabetes Care and Indigenous Australians

Indigenous Australians make up 2% of the Australian population. However, Type 2 diabetes represents a serious public health problem for Indigenous Australians, because it occurs at a much higher prevalence than in the non-Indigenous population with much earlier age of onset of the disease and its micro- and macro-vascular complications¹⁹. Indigenous Australians with diabetes are on average 10 years younger than non-Indigenous people with diabetes, have poorer glycaemic control (mean HbA1c 8.9% vs 7.9% respectively) and much lower rates of insulin use and self-monitoring²⁰. It is likely that low health literacy in Indigenous people with diabetes contributes to poor self management and outcomes, and poor communication between health professionals and patients. This is in addition to low incomes and limited opportunities to improve dietary quality, coupled with persistently high rates of tobacco smoking.

Patients with chronic conditions make day-to-day decisions to self-manage their illness. This reality introduces a new chronic disease paradigm: the patient-professional partnership, involving collaborative care and self-management education. Self-management education complements traditional patient education in supporting patients to live the best possible quality of life with their chronic condition. Whereas traditional patient education offers information and technical skills, self-management education teaches problem-solving skills. Self-efficacy is a central concept in successful self-management: confidence to carry out a behaviour necessary to reach a desired goal²¹. Improving this situation for Indigenous Australians should be a major priority for health services.

Conclusion

A growing body of literature suggests that health literacy is an important factor in improving glycemic control in Type 2 diabetes. Good health literacy requires a range of skills and knowledge about health care, including finding, understanding, interpreting and communicating health information, seeking of appropriate care and making critical health decisions. Patients with poor literacy have difficulties that range from reading labels on pills, education brochures, or informed-consent documents. They may lack the skills to accomplish these tasks and find it difficult or impossible to access and understand health care information and instructions or to implement recommended behaviours. There have been no studies looking at health literacy in Indigenous Australians, who are at highest risk of having diabetes and associated complications. It is likely that poor health literacy in Indigenous Australians contributes to poor glycemic control and of poor outcomes from chronic illness more generally. It is important that this is studied and recognised, as a better understanding of the communication barriers between patients and providers can lead to simple changes to improve how diabetes is managed, thereby reducing avoidable complications and improving quality of life more generally.

References

1. Bhattacharyya A, Christodoulides C, et al. (2002). "In-patient management of diabetes mellitus and patient satisfaction." *Diabetic Medicine* 19(5): 412-416.
2. Australian Institute of Health and Welfare and Australian Bureau of Statistics, The Health and Welfare of Australia's Aboriginal and Torres Strait Islander Peoples 2008, ABS cat no 4704.0 (2008)
3. McDermott R, McCulloch B, et al. (2007). "Diabetes in the Torres Strait Islands of Australia: better clinical systems but significant increase in weight and other risk conditions among adults, 1999-2005." *Medical Journal Australia* 186(10): 505-508.
4. Vos T, Barker B, et al. (2009). "Burden of disease and injury in Aboriginal and Torres Strait Islander Peoples: the Indigenous health gap." *International Journal of Epidemiology* 38(2): 470-477.
5. Coombe L. (2008). "The challenges of change management in Aboriginal community-controlled health organisations. Are there learnings for Cape York health reform?" *Australian Health Review* 32(4): 639-647.

6. McDermott R, Schmidt B, et al. (2001). "Improving diabetes care in the primary healthcare setting: a randomised cluster trial in remote Indigenous communities." *Medical Journal Australia* 174(21 May): 497-502.
7. Keleher H & Hagger V. (2007). "Health Literacy in Primary Health Care." *Australian Journal of Primary Health* 13(2): 24-30.
8. Schillinger D, Grumbach K, et al. (2002). "Association of Health Literacy With Diabetes Outcomes." *JAMA* 288(4).
9. Sudore R, Yaffe K, et al. (2006). "Limited literacy and mortality in the elderly: the health, aging, and body composition study." *Journal of General Internal Medicine* 21(8): 806-812.
10. Nath C. (2007). "Literacy and diabetes self-management." *American Journal of Nursing* 107(6 Suppl): 43-49; quiz 49.
11. Quirk P. (2000). "Screening for Literacy and Readability: Implications for the Advanced Practice Nurse." *Clinical Nurse Specialist* 14(1): 26-32.
12. Kleinbeck C. (2005). "Diabetes Outcomes, Low Literacy." *Home Healthcare Nurse* 23(1): 16-22.
13. Baker DW, Williams MV, et al. (1999). "Development of a brief test to measure functional health literacy." *Patient Education & Counseling* 38(1): 33-42.
14. Heisler M, Piette J, et al. (2005). "The Relationship Between Knowledge of Recent HbA1c Values and Diabetes Care Understanding and Self-Management." *Diabetes Care* 28(4): 816-822.
15. Rothman R, Malone R, et al. (2004). "The Relationship Between Literacy and Glycemic Control in a Diabetes Disease-Management Program." *The Diabetes Educator* 30(2): 263-273.
16. Powell C, Hill E, et al. (2007). "The relationship between health literacy and diabetes knowledge and readiness to take health actions." *Diabetes Education* 33(2007): 144-151.
17. Schillinger D, Barton L, et al. (2006). "Does Literacy Mediate the Relationship Between Education and Health Outcomes? A Study of a Low-Income Population with Diabetes." *Public Health Reports* 121(3): 245-254.
18. Mancuso J. (2010). "Impact of health literacy and patient trust on glycemic control in an urban USA population." *Nursing and Health Sciences* 12: 94-104.
19. O'Dea K, Rowley K, et al. (2007). "Diabetes in Indigenous Australians: possible ways forward." *Medical Journal Australia* 186(10): 494-495.
20. McDermott R, Tulip F, et al. (2004). "Sustaining better diabetes care in remote Indigenous Australian communities." *Quality & Safety in Health Care* 13(4): 295-298.
21. Bodenheimer T, Edward M, et al. (2002). "Improving Primary Care for patients with Chronic Illness." *JAMA* 288(2002): 1909-1914.

Have you renewed your subscription?

Take advantage of our low rates and subscribe now! Don't miss out on your copy of the *Journal*. Subscribers receive six issues per year, plus the *Indigenous Health Promotion Resources Guide*, the *Annotated Index of Indigenous Health Information* and other exclusive benefits

For more information or to subscribe, visit our website – www.aihwj.com.au or complete the Subscription Form in this issue.

JOURNAL DEADLINES FOR 2011

EDITION	ARTICLE SUBMISSIONS	MAILED OUT
January/February	Thursday 27 January 2011	Friday 11 February 2011
March/April	Thursday 24 February 2011	Friday 18 March 2011
May/June	Thursday 21 April 2011	Friday 6 May 2011
July/August	Thursday 23 June 2011	Thursday 7 July 2011
September/October	Thursday 18 August 2011	Friday 2 September 2011
November/December	Thursday 20 October 2011	Friday 4 November 2011

Valid as at November 2010