

Social, political and economic implications of self-blood glucose monitoring in type 2 diabetes management.

A qualitative study of how Australian health care professionals form their convictions – viewed through the lens of self-blood glucose monitoring in patients with non-insulin treated diabetes mellitus

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CERTIFICATE OF ORIGINAL AUTHORSHIP

I certify that the work in this thesis has not previously been submitted for a degree nor has it been submitted as part of requirements for a degree except as fully acknowledged within the text.

I also certify that the thesis has been written by me. Any help that I have received in my research work and the preparation of the thesis itself has been acknowledged. In addition, I certify that all information sources and literature used are indicated in the thesis.

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I hope I got the balance right.

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ABSTRACT

Background: Globally the burden of diabetes is increasing. Self-monitoring of blood glucose (SMBG) has been recommended as part of diabetes management, irrespective of treatment, for 50 years. There is evidence that SMBG does not clinically improve glycaemic control in all patients with non-insulin treated type 2 diabetes (NITT2DM). Funding and practice models are influenced by stakeholders, including industry and patient advocacy groups. Yet how Australian HCPs formulate their views regarding SMBG has not been studied.

Aim: This research is designed to inform our understanding of the factors that influence Australian HCP's perceived value of SMBG for patients with NITT2DM and to review the evidence for SMBG analysing social, political and economic trends influencing recommendations.

Method: Following a review of evidence and detailed review of policy documents, using a Qualitative Descriptive method, qualitative semi-structured interviews were undertaken with Australian HCPs to obtain insight into their beliefs and practices relating to SMBG in patients with NITT2DM. The perceptions about the value of monitoring, why and how HCPs form these views, and the ways they use the results were examined. Moreover, the type and source of the education and training of HCPs were identified.

Results: A qualitative approach thematic analysis of the data resulted in key insights from 25 interviews with diabetes educators, pharmacists, endocrinologists, general practitioners, dietitians and primary care nurses. Seven main themes emerged from the analysis: (1) The perceived value of SMBG in people with diabetes varies within and between health professional groups; (2) The information patients receive about SMBG is limited; (3) SMBG is not a benign activity and can have negative consequences; (4) The health care professionals most likely to use the results in a purposeful manner are diabetes educators and dietitians; (5) the capacity to provide specialised training to patients is limited; (6) Professional training does not address SMBG; and (7) HCPs want impartial information about SMBG.

Conclusions: This thesis demonstrated that the views of HCPs are varied and largely based on inconsistent information, training as well as the influence of marketing, and other key stakeholder groups. The consequences of these actions have implications for the health care system, provider and patients. Inconsistent recommendations to patients contribute to adverse health care outcomes and rising health care costs. These findings provide an empirical basis to inform educational and policy interventions to help ensure that training and recommendations regarding SMBG are standardised and evidence-based.

Definition of terminology

Blood glucose meter: Portable, hand-held, battery operated instruments used in conjunction with blood glucose test strips (BGTS) to measure glucose concentration rapidly in a small sample of whole blood.

HbA1c (Haemoglobin A1c or glycosylated haemoglobin): The HbA1c assay reflects glucose control over the three months prior to obtaining the blood sample. It is the only measure of glycaemic control that has been shown to be associated with long-term complications of diabetes.

Self-monitoring of blood glucose (SMBG): The act of obtaining a blood sample – usually by the finger-stick method, placing the sample on a strip that is inserted into the blood glucose meter. The meter will give a result usually within several seconds, displaying the current blood glucose level.

Type 1 diabetes mellitus: An autoimmune condition that usually develops in childhood and results in the destruction of insulin-producing β -cells in the pancreas and absolute insulin deficiency.

Type 2 Diabetes Mellitus: A chronic condition that commonly develops in late adulthood. Type 2 diabetes results from increasing insulin resistance, a reduction in β -cell function, and declining β -cell mass.

ADEA: Australian Diabetes Educators Association. The leading Australian organisation for health care professionals providing diabetes education and care.

ADS: Australian Diabetes Society. The peak medical and scientific body in Australia for diabetes consisting of predominantly endocrinologists, basic science researchers and health administration members.

APNA: Australian Practice Nurse Association. The peak professional body for nurses working in primary health care including general practice.

DA: Diabetes Australia. Diabetes Australia is the national body for people affected by all types of diabetes and those at risk.

DAA: Dietitian's Association of Australia. The national association of the dietetic profession, with branches in each state and territory.

NDSS: National Diabetes Services Scheme. An initiative of the Australian Government and administered by Diabetes Australia. The scheme delivers diabetes-related products, information and support services to almost 1.1 million Australians with diabetes.

NPS: National Prescribing Service. NPS MedicineWise is an independent, not-for-profit and evidence-based organisation that provides practical tools such as medicines with the aim to improve the way health technologies, medicines and medical tests are prescribed and used.

PBS: Prescription Benefit Scheme. A program of the Australian Government that provides subsidised prescription drugs to residents of Australia.

PSA: Pharmaceutical Society of Australia. PSA is the major provider of continuing professional development programmes for pharmacists in Australia.

RACGP: Royal Australian College of General Practitioners. Australia's largest professional general practice organisation.