Patient Perspectives on Consistency of Medical Care With Recommended Care in Type 2 Diabetes

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Technical quality in health care refers to clinical or disease-specific aspects of care (1) and deals with what the patient receives relative to what is known to be effective, largely reflecting issues related to health care providers. It is widely accepted that improving disease-specific aspects of care improves health outcomes (2–4). This study determined technical quality for individuals with type 2 diabetes, one of the most common chronic diseases in Australia, based on the degree of adherence to type 2 diabetes management guidelines in Queensland, Australia. Medical records can be a flawed and impractical source of information on quality of care (5,6), while patient-based reports are independent of the practitioner and practice setting and provide a valuable assessment of the quality of care for chronic diseases from the patients' perspective (7). However, patient reports rely on the individual being aware of what care was provided and may therefore be subject to recall bias.

RESEARCH DESIGN AND METHODS

— Data were obtained from a cross-sectional survey of type 2 diabetes quality of care in 2005. Of the random sample of 1,500 members of Diabetes Australia-Queensland (DAQ), 603 adult subjects with diagnosed type 2 diabetes responded (40.2%). Nonresponders were slightly younger ($P < 0.001$) than study participants but matched on sex ($P > 0.05$).

Self-completed questionnaires obtained personal information (sex, age, residential area, education, height, and weight) and reported adherence to management guidelines. For the major outcome variables, participants were asked to assess the status of their diabetes control over the past 12 months as poor or well controlled; to identify the level of continuity of care for diabetes management for at least the past 12 months; and to identify any diabetes complications if participants had been informed of such by their doctor or nurse.

The minimum recommended frequency of annual medical care for 11 indicators was defined based on the widely disseminated and endorsed Australian standard diabetes management guidelines (8), which are available to all doctors and DAQ members. Self-reports of service frequency were then compared with the recommended frequency to define suboptimal care. Logistic regression was used to estimate association between adherence indicators and outcome variables. All odds ratios (ORs) and 95% CIs have been adjusted for significant confounders including age, BMI, and time since diabetes diagnosis.

RESULTS

— Most participants were aged >65 years (57%), almost one-half (46%) were perceived as obese, and more than one-half (60%) had a diabetes duration ≥5 years. One-quarter of participants (25%) were under the care of specialists, 79% had continuity of care from the same provider, 63% reported well-controlled diabetes, and 37% reported diabetes complications.

Almost all participants (90%) reported A1C testing satisfying minimum level, 80% reported receiving ophthalmologic examination by specialists, and 92% reported blood lipid testing (Table 1). Two-thirds of participants reported having been tested for A1C, eye problems, and blood lipid levels. Additionally, almost all individuals reported having blood pressure measurements taken, >70% reported meeting the recommended care for creatinine testing, and 42% reported meeting the recommended care for foot examination.

Assessments of lifestyle and management factors were less common among study participants. One-half reported meeting medication and self-management review at the recommended levels, and 41% reported physical activity assessment, but <20% reported meeting the recommended level for all three. Twenty-two percent reported that their diabetes knowledge was reviewed, and 18% reported nutrition consultation. Fewer than 10% reported receiving the recommended level of care for all five lifestyle and management indicators.

Adjusted ORs for diabetes control status (Table 1) showed that participants who reported meeting the recommended frequency of care for blood pressure measurement, foot examination, review of self-management, physical activity, and diabetes knowledge were significantly more likely to report well-controlled diabetes. Participants who reported receiving reviews for the top three lifestyle indicators and who maintained continuity of care were two times more likely to have well-controlled diabetes. There were positive but nonsignificant relationships between diabetes control status and each of the other recommended care services. Participants with continuity of care were 45% less likely to report diabetes complications than participants with multiple care providers for diabetes management.

CONCLUSIONS

— A substantial proportion of participants reported receiving suboptimal care. These results are consistent with those of other studies using varied methodologies (3,6,9–11) in countries

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Abbreviations: DAQ, Diabetes Australia-Queensland.
A table elsewhere in this issue shows conventional and Système International (SI) units and conversion factors for many substances.

Table 1—*Diabetes care received over the past 12 months and association between outcomes and recommended care services and continuity of care, adjusted for age, BMI, and time since diabetes diagnosis*

Recommended care	Meeting recommended annual care	Diabetes control	Complications
Clinical indicators			
A1C measurement	90.0	1.51 (0.82–2.80)	1.05 (0.55–1.99)
Ophthalmologic exam by specialist	79.6	1.46 (0.91–2.34)	0.68 (0.40–1.16)
Blood lipid control	91.7	1.94 (0.87–4.33)	1.37 (0.60–3.12)
Top three clinical indicators*	67.1	1.44 (0.96–2.16)	0.98 (0.64–1.51)
Blood pressure control	93.8	3.93 (1.64–9.44)	1.98 (0.80–4.88)
Blood creatinine control	70.9	1.41 (0.92–2.15)	0.73 (0.47–1.16)
Top five clinical indicators†	49.7	1.39 (0.94–2.04)	0.96 (0.64–1.43)
Feet examination	41.9	1.95 (1.30–2.92)	0.90 (0.60–1.35)
Management and lifestyle indicators			
Medication review	53.7	1.40 (0.95–2.06)	0.92 (0.62–1.38)
Self-management review	51.1	1.79 (1.22–2.64)	1.01 (0.68–1.51)
Physical activity review	41.3	1.55 (1.05–2.30)	1.13 (0.75–1.69)
Top three lifestyle and management indicators‡	18.8	1.92 (1.13–3.27)	1.01 (0.61–1.68)
Knowledge of diabetes	22.1	1.87 (1.14–3.06)	1.02 (0.63–1.65)
Nutrition consultation	18.1	1.69 (0.99–2.86)	1.24 (0.73–2.12)
Top five lifestyle and management indicators§	7.4	2.35 (0.99–5.62)	1.36 (0.61–3.04)
Maintaining continuity of care	—	2.38 (1.47–3.85)	0.55 (0.34–0.91)

Data are % or OR (95% CI). *Includes A1C, ophthalmologic exam, and blood lipids level. †Includes A1C, ophthalmologic exam, blood lipids level, blood pressure, and creatinine level. ‡Includes medication, self-management, and physical activity review. §Includes medication, self-management, physical activity, knowledge of diabetes, and nutrition consultation review.

with similar economies, indicating the substantial scope for improvements in the technical quality of care provided to people with type 2 diabetes compared with a relevant national guideline, particularly for some clinical examinations and self-management. We believe that a patient-based approach could be used to monitor the quality of diabetes care provided by the overall Australian health system. Such monitoring should be implemented for Australia's largest and fastest growing chronic disease.

The largest gap in medical care, related to lifestyle and management standards, suggests that new systems and new ways of improving such aspects of care need to be considered. The importance of multidisciplinary care for diabetes and active engagement of the patient in their diabetes management have been repeatedly emphasized. Potential changes include wider access to effective diabetes education programs, clinician and patient incentives to increase the relevant activities, and a patient reminder system.

The low response rate (40%) in this study is not unusual for this type of survey. If there is a bias in the responses, it is likely that participants may represent a more educated and motivated group of people with type 2 diabetes who pay more attention to their management. If so, then the results may overestimate the adherence to the diabetes guidelines and quality of care received.

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