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Short Report

A feasibility study of team-based primary care for chronic disease management training in rural Australia

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Increasing rates of chronic disease management (CDM) are projected to contribute to significant effective shortfalls in the primary care workforce in Australia.[1] Additionally, rural Australia carries a higher burden of chronic illness[2] and has existing medical workforce shortages.[3] Therefore, it is imperative that rural primary care maximises the efficiency of the CDM it provides. Primary care is also responsible for providing training for future general practitioners (GP registrars). In addition to their training roles, GP registrars (GPRs) represent an important component of the rural medical workforce.[4] However, GPRs see relatively fewer patients with chronic diseases than established GPs.[5] This reduces training opportunities in CDM and potentially impedes GPRs contributing to CDM within practices. The authors are unaware of any Australian research involving interventions to enhance the involvement of GPRs in CDM. This mixed-method pilot-study aimed to ascertain the feasibility of an intervention of support for GPR CDM training in a rural setting to inform the design of future fully powered trials.

Participants, methods and results

The intervention was a model where patients 'shared continuity' of their type 2 diabetes (T2D) management between their regular GP and a GPR/practice nurse team. GPR/nurse visits were scheduled every 3–4 months with explicit oversight and/or review by their regular GP each visit. In 2013, 37 consenting patients with type 2 diabetes (T2D) were recruited from two rural training practices (RA 3). Patients were randomised within each practice to an intervention or control arm of normal care over an eight-month period. The study was approved by the Human Research Ethics Committee of the University of Wollongong.

Data were available for 30 patients at the end of the trial: 14 (six women) intervention and 16 (eight women) control. To assess the feasibility of the intervention, 23 participants underwent semi-structured telephone interviews. Five GPRs (four women) consented to pre- and post-trial interviews regarding educational outcomes. Two male GPs and five female PNs were interviewed regarding trial practicalities and five control patients (three women) and six intervention patients (four women) consented to post-trial interviews to gauge their satisfaction.

Changes in the mean clinical parameters were compared using repeated measures general linear models (GLM), adjusting for the patients' practice, age and sex. Interview transcripts were thematically analysed.

There were no significant between-group differences in adjusted baseline parameters. Mean HbA1c increased in the intervention arm (0.4%; 95% CI −0.3%, 1.2%) and decreased in controls (−0.1%, 95% CI −0.1%, −0.1%). There was a significant difference in the adjusted difference in HbA1c change ($P = 0.02$). See Table 1.

The interviews with the GPRs indicated limited CDM exposure prior to the trial and an increase in CDM exposure and confidence by trial completion. Overall, all interviewees were receptive to the trial procedures and saw benefits from participation. While patients accepted their role in facilitating training for GPRs, there was a perception that some of the inter-personal interactions were sub-optimal. Of note, patients were unsure of the roles of the GPRs in both practices.

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TABLE 1: *Comparison of mean baseline parameters and mean changes in parameters over the trial*

Parameter	Intervention = I Control = C	N	Baseline mean	Sig.	Mean change over trial	Lower 95% CI	Upper 95% CI	Sig.
Age (years)	I	14	72.0	–	–	–	–	–
	C	16	70.8	$P = 0.61$	–	–	–	–
BMI (kg/m^2)	I	14	30.7	–	−0.2	−0.2	0.0	–
	C	15	30.8	$P = 0.96$	−0.2	−0.4	0.1	$P = 0.64$
HbA1c (%)	I	14	6.6	–	0.4	−0.3	1.2	–
	C	16	6.2	$P = 0.13$	−0.1	−0.1	−0.1	$P = 0.02$*
Systolic blood pressure (mmHg)	I	14	143.9	–	−4.4	−4.9	−3.8	–
	C	16	136.7	$P = 0.35$	−4.9	−4.9	−4.8	$P = 0.05$
Diastolic blood pressure (mmHg)	I	14	75.4	–	−4.6	−15.0	5.9	–
	C	16	75.7	$P = 0.93$	−6.9	−14.0	0.6	$P = 0.27$
Total cholesterol (mmol/L)	I	14	3.9	–	−0.1	-0.4	0.1	–
	C	15	4.5	$P = 0.18$	−0.4	−0.6	−0.2	$P = 0.13$
Triglycerides (mmol/L)	I	14	1.9	–	0.0	−0.3	0.2	–
	C	15	1.6	$P = 0.31$	0.0	−0.1	0.1	$P = 0.27$

*Statistically significant at $P < 0.05$.

Comment

This pilot intervention was associated with GPRs experiencing improved self-reported exposure to, and confidence in, CDM. However, there was a statistically significant deterioration in glycaemic control in the intervention group. Supervised, team-based care for CDM within rural practices is a plausible educational model for GPR training and could augment the provision of rural CDM in primary care. However, we urge caution in its implementation. The study indicated a large scale trial is feasible and is required to robustly test clinical and educational outcomes. If implemented either as research or as an educational or workforce intervention, this model of care requires thorough preparation, communication and training for all parties.

Authors' contributions

Conception and design of the work: Bonney; Bridget Dijkmans-Hadley; McKinnon; Seidel; and Phillipson. Acquisition of data: McKinnon; Seidel and Dijkmans-Hadley. Analysis of data: Bonney; Seidel; Dijkmans-Hadley and Phillipson. Drafting the manuscript: Bonney and Dijkmans-Hadley. Revising and critically reviewing: Dijkmans-Hadley; McKinnon; Seidel and Phillipson. All authors have approved the final version and agree to be held accountable for the accuracy and integrity of the work.

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