

A Team Care Approach for Chinese Americans with Diabetes: Applying the Bodenheimer Teamlet model

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Significance of Project

- Diabetes prevalence among Chinese Americans has been estimated at 15%, about 2.5 times higher than the general US population.^{1,2}
- Diabetes rates are 5-7 times higher for Chinese Americans than for Chinese in their native countries.³
- Chinese Americans may face barriers in accessing diabetes care, including lack of cultural orientation, lack of culturally proficient care, lack of health insurance, and inadequate health services for those with limited English proficiency. Patients with diabetes may have poorer outcomes.

¹Centers for Disease Control and Prevention, 2002

²Cowie et al., 2003

³Carter, Pugh, & Monterrosa, 1996

Project Aims



- Assess community needs and resources available to the Chinese American community
- Apply Community Based Participatory approaches to develop a culturally and linguistically-tailored diabetes intervention

Project Aims (cont)

- Apply principles from Bodenheimer's Health Coaching/Teamlet to design an innovative patient-centered diabetes care intervention to address barriers for Chinese American diabetics at a community health center
 - Compare outcomes of the proposed new clinical approach with those of usual care;
 - Assess the feasibility of implementing the proposed new clinical approach
 - Examine the additional worker cost to implement the initiative

Overall Research Design (1)

- A collaboration between Asian Health Services (AHS), UC Berkeley's School of Public Health, and the Association of Asian Pacific Community Health Organizations (AAPCHO).
- Research activities were implemented at Asian Health Services, a community clinic in Oakland, CA, that primarily serves low income Asian Americans, many of whom are immigrants.
- Development of a nutritional curriculum for medical assistants who will be the health coaches

Overall Research Design (2)

- Evaluation of diabetes team care intervention
 - Patient surveys and medical record abstractions (HbA1c* and blood pressure)
 - Patient and Family member focus groups
 - Key informant interviews with providers
- Nutritional assessment key informant interviews with AHS medical assistants—evaluating baseline knowledge about nutrition for diabetics

* HbA1c measures average blood glucose over a period of time

Team Care Intervention

- Patients in one medical unit (intervention unit) received the intervention, while patients in another medical unit (control unit) did not receive the intervention. No overlap of MDs or MAs.
- The intervention included:
 - Meeting with the health coach (a medical assistant with special training) immediately before and after seeing the doctor
 - A follow-up phone call from the health coach 1 week after the physician visit
 - A counseling session with the dietitian about 2 weeks after the physician visit

Team Care Program Activities



- An enhanced health coach training curriculum, including an improved nutrition curriculum that resulted from this project, was designed and training provided to the medical assistants in the intervention unit.
- Findings expanded to additional units at end of study
- At AHS's new site, the Frank Kiang Medical Center, health navigators received health coach training to implement a similar program.

Evaluation of Team Care Intervention

- Enrolled 95 patients from intervention and control units. 92 subjects had follow-up HbA1c test results and were included in the primary analysis.
- Study subjects:
 - Have type 2 diabetes
 - Are of Chinese heritage
 - Are 18 and older
 - Had a baseline HbA1c between 6 and 11 %
- Patients were interviewed and had clinical data abstracted from their medical records when they entered the study and approximately 3 and 6 months later

Evaluation of Team Care Intervention: Demographics of Study Participants (1)

	Control unit	Intervention unit	Overall
	N=46	N=46	N=92
Sex	n (%)	n (%)	n (%)
Male	14 (30.4)	18 (39.1)	32 (34.8)
Female	32 (69.6)	28 (60.9)	60 (65.2)
Age (mean)	66.8	66.5	66.7

Evaluation of Team Care Intervention: Demographics of Study Participants (2)

	Control unit N=46	Intervention unit N=46	Overall N=92
Primary language spoken at home	n (%)	n (%)	n (%)
Cantonese	37 (80.4)	30 (65.2)	67 (72.8)
Mandarin	3 (6.5)	9 (19.6)	12 (13.0)
Other	5 (10.9)	4 (8.7)	9 (9.8)
More than one language	1 (2.2)	2 (4.4)	3 (3.3)
Years living in U.S. (mean) (n=76)	18.2	16.6	17.4

Evaluation of Team Care Intervention: Demographics of Study Participants (3)

	Control unit	Intervention unit	Overall
	N=46	N=46	N=92
Education	n (%)	n (%)	n (%)
Less than high school graduate	32 (69.6)	30 (65.2)	62 (67.3)
High school graduate	6 (13.0)	9 (19.6)	15 (16.3)
Some college or college grad	8 (17.4)	7 (15.2)	15 (16.3)

Evaluation of Team Care Intervention: Demographics of Study Participants (4)

	Control unit N=46	Intervention unit N=46	Overall N=92
Health status (n=76)	n (%)	n (%)	n (%)
Poor	10 (22.7)	11 (29.4)	21 (22.8)
Fair	26 (59.1)	29 (64.4)	55 (59.7)
Good	5 (11.4)	4 (8.9)	9 (9.8)
Very good	3 (6.8)	1 (2.2)	4 (4.3)
Excellent	0 (0)	0 (0)	0 (0)
Percent Uninsured	26.1%	28.3%	27.2%

Evaluation of Team Care Intervention: Effects on HbA1c* (1)

	Control unit n=46	Intervention unit n=46	p value**
Mean HbA1c at Baseline	7.62	7.60	
Mean HbA1c at 6 months	7.63	7.24	
Mean of difference in HbA1c (6 months - Baseline)	0.02	-0.36	0.1423

*HbA1c measures average blood glucose over a period of time

**p value based on Student's t-test

Evaluation of Team Care

Intervention: Effects on HbA1c (2)

	Control	Intervention	
	unit	unit	p value*
	n=46	n=46	
HbA1c not well-controlled ($\geq 7\%$) (Baseline)	37 (80.4)	33 (71.7)	0.4640
HbA1c not well-controlled ($\geq 7\%$) (6 months)	35 (76.1)	25 (54.4)	0.0480

*p value based on Fisher's exact test

Limitations/Strengths



- Power to detect a significant difference in change in HbA1c between groups was low given the small sample size of this pilot study; therefore we cannot rule out the possibility of a Type II error.
- Mean decrease in intervention group (-0.40%) was similar to effects seen in other studies of CHW and even medications

Key informant interviews



- Conducted with Asian Health Services staff before and after implementation of the Team Care Model intervention
- 1 physician (MD), 1 medical assistant (MA), 1 dietitian (RD) from the intervention unit and from the control unit

Key informant interviews— general themes



- Patients lack understanding about and compliance with taking Western medications.
- Providers that listen and are culturally sensitive to patients' needs, beliefs, and life circumstances are key to patient compliance and diabetes management.
- Coordination of care for patients with diabetes is lacking.
- Family support is important to a patient's diabetes management.

Project Team

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Community Advisory Committee



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