Factors Influencing Successful Completion of the Chronic Disease Self-Management Program by Adults with Diabetes

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Background & Purpose

The Chronic Disease Self-Management Program (CDSMP) is a 6-session workshop designed to address the need for self-management education in persons with chronic disease, including type 2 diabetes mellitus (T2DM) found disproportionately in underserved and minority populations. The purpose of this study was to identify factors that may be associated with successful completion of the CDSMP in adults with T2DM.
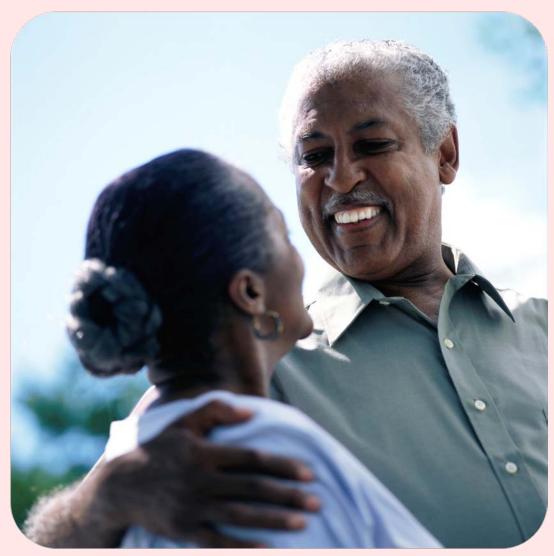
Methods

One hundred and thirteen patients with T2DM and an HbA_{1c} ≥ 7.5 (last 6 months) were enrolled in CDSMP classes and participated in a survey as part of a larger study on diabetes interventions and outcomes. All patients were members of the same HMO in central Texas. The survey included:

- demographics (race/ethnicity, age, gender, education, income);
- health-related quality of life (HRQL-4 scale);
- physical activity measures (BRFSS);
- pain and fatigue (visual analog scales); and
- selected questions from the Summary of Diabetes Self-Care Activities (SDSCA) on diet, exercise, home blood glucose monitoring (HBGM), and foot care.

Clinical data included height, weight, BMI and HbA_{1c}. CDSMP leaders were certified through Stanford University's Patient Education Research Center and followed the program's protocols. **Successful completion was defined as attendance in at least 4 of 6 sessions**. T-tests and Fisher's exact were used to assess differences between completers (CT) and non-completers (NC) of the CDSMP.

Participants anecdotally cited "action planning" (i.e. a weekly goal-setting activity) as the CDSMP activity that was the most helpful.

Table 1. Description of CDSMP Participants in the Current Study, and in recent (2010) Texas and U.S. Initiatives.

Demographic	Current Study (n=113)	Texas** (n=360)	AoA State Initiatives*** (n=>12,467)
Completed CDSMP* (%)	**74.0**	39.1	41.7
Female (%)	**52.7**	78.8	78.0
Age ≤60 (%)	**57.1**	17.6	28.3
Minority: African American (%)	**17.9**	21.5	16.9
Ethnicity: Hispanic/Latino (%)	**17.9**	37.3	19.7
Education less than HS (%)	**6.3**	n/a	n/a
Income less than $15,000 (%)	**8.3**	n/a	n/a

* Completed at least 4 of the 6 sessions.
** Texas data from the CDC's Communities Putting Prevention to Work (4/1/10-9/30/10)
*** US data (50 states) from the CDC's Communities Putting Prevention to Work (1/1/10-9/30/10)

Results

- Seventy-four % of participants successfully completed the CDSMP. A description of the subjects is shown in **Table 1** with comparisons to recent Texas and U.S. data. (Demographics for the study participants were based largely on the parent study which required 60% female and 50% minority.)

- There were no significant differences between CT and NC with regard to: age, race/ethnicity, gender (**Table 2**); general health; and responses to questions on physical activity, nutrition, HBGM, and foot care.

- Although not significantly different, the average number of days per week that CT participated in self-care activities was greater than that for NC for almost every positive self-care task including: HBGM (4.87 vs. 4.71); checking feet (5.03 vs. 4.50); following a healthful eating plan (4.09 vs. 3.28); spacing carbohydrates (3.61 vs. 2.62); and participating in ≥30 minutes of exercise (3.32 vs. 2.90). (See **Table 3**)

Table 2. No Impact of Gender and Race/Ethnicity on CDSMP Completion Status (i.e., Completers & Non-Completers).

Gender	Completers % (n)	Non-Completers % (n)	
Female (n=62)	74.2 (46)	25.8 (16)	**P=0.531***
Male (n=50)	68.0 (34)	32.0 (16)	

Race/Ethnicity	Completers % (n)	Non-Completers % (n)	
Caucasian (n=74)	74.3 (55)	25.7 (19)	**P=0.480***
African American (n=19)	73.7 (14)	26.3 (5)	
Hispanic (n=20)	60.0 (12)	40.0 (8)	

* Results of two-sided Fisher's exact.

Table 3. Average days per Week that CDSMP Completers (n=84) and Non-Completers (n=29) Participated in Self-Care Measures.

Self-Care Activity	Completers (days/wk)	Non-Completers (days/wk)	P>0.05
30 minutes any physical activity?	**3.32**	2.90	0.32
Daily exercise session?	**2.56**	2.00	0.24
Test your blood sugar?	**4.87**	4.71	0.75
Test sugar # times provider recommends?	**3.57**	3.46	0.84
Check your feet?	**5.03**	4.50	0.32
Wash your feet?	6.44	**6.80**	0.16
Soak your feet?	**1.66**	1.46	0.70
Dry between your toes?	**5.60**	5.15	0.40
Inspect inside of shoes?	3.21	**3.50**	0.66
Follow a healthful eating plan?	**4.09**	3.28	0.06
Space carbohydrates evenly?	**3.61**	2.62	0.06
Eat ≥5 fruit/vegetable servings?	**3.86**	3.38	0.32
Eat high-fat products (red meat, full-fat diary)?	3.54	**3.18**	0.38
Eat packaged or bakery goods?	**2.20**	2.37	0.63

Conclusion

The relatively high completion rate of the CDSMP was not found to be influenced by race/ethnicity, socioeconomic status, or recent HbA1c values – three factors that have been linked to health disparities. Successful completion of the CDSMP may therefore imply adherence to diabetes self-care activities *across* racial/ethnicity groups, although this outcome needs to be explored further since this study may have lacked adequate power to see any significant effect.

To learn more about the Chronic Disease Self-Management Program, visit the following website:
http://patienteducation.stanford.edu/programs/cdsmp.html