

Is Physicians' Self Efficacy Associated with Preventive Cardiovascular Outcomes?

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BACKGROUND

- Despite the availability of scientifically-based treatment guidelines developed by national health organizations (i.e. NCEP III, JNC VII, ADA) regarding the benefits of tight blood pressure, glucose and cholesterol control, studies demonstrate that many patients do not achieve recommended goals.
- Physician-directed interventions to improve cardiovascular risk factor control and other aspects of health care delivery are based on assumptions that enhancing physician self efficacy will result in better treatment outcomes for patients.
- Health care delivery is continually evolving and new systems of care "management" may prove to be more effective at improving health care delivery such as: clinical reminders, audit and feedback of performance indicators, which are being implemented at the Veterans Health Administration (VHA).

STUDY OBJECTIVE

To examine the relationship between physicians' self efficacy at treating cardiovascular diseases and cardiovascular disease treatment outcomes in patients with diabetes mellitus in the outpatient primary care clinics of a large VA facility (Cleveland VAMC).

METHODS

- Design and Data source:** Retrospective cohort study using data from the VA electronic health record.
- Study subjects:** 1) diabetic patients seen in primary care clinics between 7/1 – 9/30/05. 2) PCPs (n=59 faculty physicians, residents, and nurse practitioners) in outpatient clinics of the Cleveland VA facility were asked to complete the Hyperlipidemia Attitudes and Beliefs in Treatment (HABIT) survey. We also used a subscale from PMAAQ – preventive medicine attitudes and activities questionnaire.
- Outcomes:** Framingham Risk Score (FRS), systolic blood pressure (SBP), and the most recent (within the last 6-months) low-density lipoprotein-cholesterol (LDL-c) value.
- Exclusion:** Treatment by more than one PCP during this time (n=128).

Efficacy/Attitudes of PCPs

Subscales from HABIT and PMAAQ assessed:

- efficacy in treating to recommended goals (7 items)
- perceived effectiveness at changing CVP-related patient behavior (3 items)
- whether achieving risk factor control close to goal was sufficient (6 items)
- urgency in attaining recommended CVP-related treatment goals (4 items)

Figure: Relationship between CVD outcomes and physicians' self efficacy and attitudes

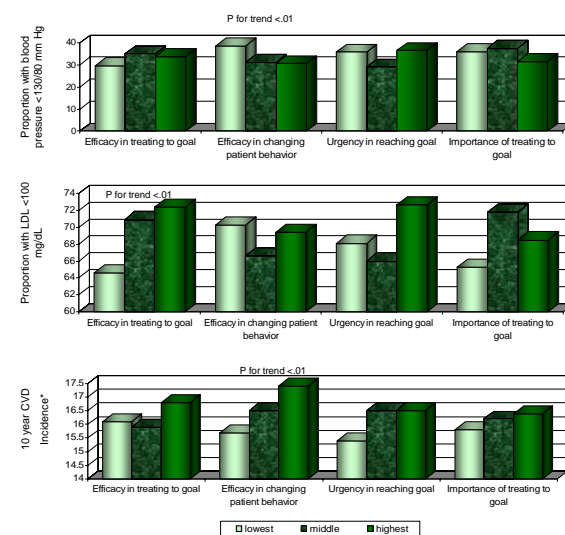


Table 1: Characteristics, Efficacy, and Attitudes of Primary Care Providers (n=59)

Characteristics	Number (%)
Years in practice, mean (SD)	4.4 (5.7)
Male Gender	30 (50.8)
Training status	
Intern	16 (27.1)
Resident	30 (49.2)
Staff Physician	9 (15.3)
Nurse Practitioner	5 (8.5)
Provider CVP (cardiovascular prevention)-related efficacy and attitude subscale*	
Efficacy in treating patients to goal	3.5 (0.5)
Importance of getting to goal	3.9 (0.6)
Urgency to get patients to goal	3.9 (0.7)
Efficacy at changing patient behavior	3.1 (0.5)

* Scores were divided by the number of items in the subscale to align with the response format for individual items. 1=strongly disagree, 5=strongly agree

Table 2: Characteristics of and Intermediate Outcomes for PCP's Patients with Diabetes (n=1495)

Characteristics	Number (%)
Age	
< 45 years	42 (2.8)
45-55	143 (9.6)
55-65	422 (28.2)
65-75	366 (24.5)
75-85	38 (25.7)
>85	27 (1.8)
Male Gender	1478 (98.9)
Number of co-morbid conditions detected	
≤1	1093 (73.1)
2-3	343 (23.0)
≥4	59 (3.9)
Number of primary care visits during the study period	
1	477 (31.9)
2	521 (34.8)
3-4	421 (28.4)
5-6	64 (4.3)
≥7	9 (0.6)
Intermediate outcomes at baseline	
Framingham Risk Score, mean (SD)	16.9 (7.9)
N with LDL ≤100 mg/dL (%)	900 (60.2)
N with Blood Pressure <130/80 mm Hg (%)	445 (29.8)

Multivariate Analyses-Summary of Findings

- Controlling for patient and provider covariates, efficacy at changing CVP-related behavior and the importance providers' place on getting their patients to goal were **not significantly related** to a patient's BP, lipid values (dichotomous and continuous) or FRS.
- Urgency in achieving recommended goals **was associated** with a greater probability that a patient's LDL was below goal (OR [95% CI] 1.09 [1.0, 1.17]; P=0.04).
 - When LDL was modeled as a continuous value, this association did not hold (0.99 [0.94, 1.07]; P=0.94).
- Greater provider efficacy in treating to recommended goals **was not associated** with better lipid control, but **was associated** with a **lower** probability that a patient achieved BP control below the recommended goal (0.93 [0.89, 0.98]; P=0.005).
 - When systolic BP was modeled as a continuous value, the latter association approached significance (coefficient 0.70; P=0.06).

LIMITATIONS

- Retrospective study design does not allow us to draw causal inferences.
- Time of follow up may have been too short to see a difference in outcome.
- Measures of efficacy and other treatment-related attitudes may not have been adequate.
- In regards to the BP outcome, we only measured the actual value, not the BP medication used (i.e. in diabetics, use of ace inhibitors can decrease renal dysfunction), which can influence outcomes despite BP control.
- Possibility of a Type II error (insufficient power to detect a small but important association).
- Results may not generalize to other veteran populations or other settings.
- Health care outcomes have many determinants other than those related to features of the health care encounter –
 - Unmeasured factors may have obscured the presence of an important relationship with process of care.

CONCLUSIONS

- This study does not demonstrate strong links between provider efficacy and related patient outcomes.
- This study challenges us to look beyond education as a tool for improvement by developing strategies that address a broader range of factors influencing patient outcomes.
- Changing the infrastructure and environment around preventive health outcomes may prove more cost effective than focusing entirely on physician self efficacy.
- Some examples include clinical reminders for physicians using electronic medical records and ordering systems, patient and physician incentives for attaining certain levels of care/screening and cardiovascular outcomes.
- Having separate preventive health clinics may be more effective than incorporating the preventive health visit within routine visits.
- Future studies should also evaluate the type of medication used to lower BP in diabetics.

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