

PHYSICIANS' PERSONAL HEALTH PRACTICES AND THEIR EFFECT ON THEIR PATIENTS' HEALTH PRACTICES

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A – study design, **B** – data collection, **C** – statistical analysis, **D** – interpretation of data, **E** – manuscript preparation, **F** – literature review, **G** – sourcing of funding

ABSTRACT

Background: Although much has been written about the potential power of the association between physicians' personal health practices and those of their patients, we found few objective studies of this relationship. We therefore investigated this association using objectively measured health care indicators.

Aim of the study: The aim of the study was to show the association between physicians' own screening/immunization practices and their patients screening/immunization practices.

Material and methods: We assessed 8 indicators of quality of health care (screening and vaccination practices) for primary care physicians (n=1488) and their adult patients (n = 1 886 791) in Israel's largest health maintenance organization. The physicians were also patients in this health care system

Results: For all 8 indicators, patients whose physicians were compliant with the preventive practices were more likely ($p < 0.05$) to also have undergone these preventive measures than patients with noncompliant physicians. We also found that more similar preventive practices showed somewhat stronger relations. For example, among patients whose physician had received the influenza vaccine, 49.1% of eligible patients received influenza vaccines compared to 43.2% of patients whose physicians did not receive the vaccine (5.9% absolute difference, 13.7% relative difference). This is twice the relative difference (7.2%) shown for pneumococcal vaccine—eligible patients of influenza-vaccinated versus non vaccinated physicians (60.9 vs 56.8%). When we examined the rates of un-related practices, we found that, for example, mammography rates were identical for patients whose physicians did and did not receive the influenza vaccine

Conclusions: We found a consistent, positive relation between physicians' and patients' preventive health practices. Objectively establishing this healthy doctor—healthy patient relationship should encourage prevention-oriented health care systems to better support and evaluate the effects on patients of improving the physical health of medical students and physicians.

KEYWORDS: physicians, patients, personal health practices, health care indicators

BACKGROUND

Physicians in industrialized countries live longer than do the general population in those countries (even when compared with others of high socioeconomic status (SES) [1–3]. Their self-reported health related habits have also been found to be considerably better than that of others (including those of high SES) [3].

Doctors' health matters, both because a healthy physician workforce is more productive, and because

physicians' health practices affect their patient counseling habits.

In addition, we hypothesized that physicians' objectively-measured personal preventive practices are directly correlated with their patients' objectively-measured related preventive experiences. It has been established (at least in Canada, Colombia, and the U.S.) that physicians and medical students who report healthier personal habits are also consistently and significantly

more likely to also report more frequent patient counseling on related habits [4–9]. However, this healthy doctor - healthy patient link has only been studied via physicians' and patients' self-reported counselling and preventive practices, not through objectively-measured clinical prevention practices, documented with electronic medical records.

AIM OF THE STUDY

The aim of the study was to show the association between physicians' own screening/immunization practices and their patients screening/immunization practices.

MATERIAL AND METHODS

In 2011, we electronically accessed all eight preventive quality health indicators (screening and immunization practices) in Israel's largest health maintenance organization from primary care physicians (PCPs, n=1,488) who were also system patients, and from their adult patients (n=1,886,791) to determine if the healthy doctor-healthy patient relationship that we hypothesized was true

We analyzed a comprehensive central database where all Clalit Health Services (CHS) patients' computerized demographic, risk factor, disease registry, pharmacy, quality indicator and other clinical and

administrative data are stored. Data were identified through patients' identification numbers and the primary care physician to whom they were allocated. For each PCP, we determined the total number of patients, the percentage of men, the percentage of patients >65 years of age, and the percentage of low socioeconomic status patients. We examined CHS physicians' own prevention habits and those of their adult patients among PCPs who had worked for at least a year in the same practice in CHS, who are also insured by CHS, and who had a patient panel of >=500 patients. For each indicator tested, we included PCPs with at least 5 patients eligible for the specific indicator, providing a cross-sectional measure of concordance between physicians' personal and clinical prevention habits, as evidenced by their patients' clinical experiences. This study was approved by the CHS Ethics Committee.

RESULTS

Tab. 1 shows the association between physicians' own screening/immunization practices and those of their patients (n=1,886,791). In every case, our primary hypothesis was confirmed. Patients with prevention-compliant PCPs were significantly more likely to also have those prevention practices than were patients with non-compliant physicians. (p<0.05) Often this difference was also clinically significant, showing as much as a 13.7% relative (though lower absolute) difference

Table 1. Proportion of 1 886 791 patients who received a preventive intervention, according to whether their physician received or did not receive a corresponding preventive intervention

Receipt of intervention by eligible physicians	Mean % of eligible patients who received intervention							
	Mammogram	Colorectal cancer screening	LDL measurement	Blood pressure measurement			Pneumococcal vaccine	Influenza vaccine
				Every 5 yr if age 20–40 yr	Every 2 yr if age 41–54 yr	Every year if age ≥ 55 yr		
Mammogram								
Yes (n = 231, 67.0%)	69.5	49.2	83.3	84.3	81.5	77.8	57.3	44.5
No (n = 114, 33.0%)	66.7	45.4	82.2	82.9	79.7	76.5	52.9	40.6
p value*	0.002†	< 0.001‡	0.1	0.2	0.1	0.2	0.002‡	0.003‡
Colorectal cancer screening								
Yes (n = 502, 60.9%)	68.4	50.0	83.2	82.8	81.7	78.4	59.8	47.6
No (n = 322, 39.1%)	66.1	45.6	81.3	82.3	81.2	77.0	58.1	45.0
p value*	< 0.001‡	< 0.001†	< 0.001‡	0.5	0.5	0.06	0.08	0.007‡
LDL measurement								
Yes (n = 602, 88.7%)	67.8	48.1	83.1	82.7	81.4	77.3	59.0	46.3
No (n = 77, 11.3%)	64.9	47.4	81.2	83.4	81.6	77.0	59.3	47.0
p value*	0.01‡	0.6	0.02†	0.6	0.8	0.8	0.8	0.9
Blood pressure measurement every 5 yr if age 20–40 yr								
Yes (n = 118, 60.5%)	66.2	47.1	82.2	83.7	82.2	78.3	59.6	45.4
No (n = 51, 39.5%)	67.5	48.8	83.5	80.9	79.6	73.2	58.0	46.1
p value*	0.4	0.2	0.2	0.04†	0.1	0.004‡	0.4	0.8
Blood pressure measurement every 2 yr if age 41–54 yr								
Yes (n = 371, 73.2%)	67.1	47.7	82.9	83.5	82.6	78.4	59.0	46.4
No (n = 136, 26.8%)	68.6	48.9	82.8	82.7	80.7	76.5	58.8	47.0
p value*	0.07	0.2	0.8	0.4	0.04†	0.03†	0.8	0.7
Blood pressure measurement every year if age ≥ 55 yr								
Yes (n = 194, 66.2%)	67.1	47.3	82.1	83.5	81.9	78.3	59.6	44.6
No (n = 99, 33.8%)	67.1	46.3	82.0	78.5	76.8	73.8	57.7	45.7
p value*	0.9	0.4	0.8	0.003‡	< 0.001‡	< 0.001†	0.2	0.5
Pneumococcal vaccine								
Yes (n = 101, 44.5%)	66.5	48.8	81.6	83.7	84.3	80.4	62.1	49.0
No (n = 126, 55.5%)	66.5	47.1	80.7	81.4	80.3	76.4	56.6	45.1
p value*	0.9	0.2	0.4	0.2	0.01‡	0.005‡	0.004†	0.03‡
Influenza vaccine								
Yes (n = 735, 51.2%)	67.2	48.2	82.8	82.9	82.0	78.0	60.9	49.1
No (n = 701, 48.8%)	67.1	46.1	81.9	82.8	81.0	77.0	56.8	43.2
p value*	0.8	< 0.001‡	0.01‡	0.9	0.07	0.04‡	< 0.001‡	< 0.001†

Note: LDL = low-density lipoprotein.
 *Calculated using the χ^2 test.
 †p value for comparison of identical patient and doctor preventive interventions (e.g., % of eligible patients having a mammogram v. % of their physicians who had a mammogram), indicating a patient's likelihood of receiving the intervention depending on whether or not the patient's doctor had received the same intervention.
 ‡p < 0.05 for comparison of nonidentical patient and doctor preventive interventions (e.g., % of eligible patients having a mammogram v. % of their doctors who underwent colorectal cancer screening), indicating the likelihood of a patient receiving the intervention depending on whether or not the patient's doctor had received the comparison intervention.

between patients with compliant and non-compliant PCPs. As also shown in the table, we found that, while some recorded physician preventive habits were better than those of patients (influenza vaccine, LDL measurement, and CRC screening), some were worse (Pneumovax and BP measured by their PCP's office), and one was similar (mammography).

CONCLUSIONS

These data indicate that making it easier for physicians to personally obtain preventive care increases the likelihood that their patients would also obtain such care. We believe that physician health promotion programs should be developed and studied to determine how best to actively-encourage this association. We know of only one large intervention study [10,11] to promote healthy physical habits among medical students, and of none promoting healthy physical habits among physicians. The former study [10,11] demonstrated that intervening to improve medical students' dietary and exercise practices improved their likelihood of them counselling patients on diet and exercise. Our study of electronic medical record data, compared to

self-report used in previous studies suggests that there is room for improvement in some physicians' personal prevention practices, particularly around screening and immunization, and that improving the health of this relatively small cohort of physicians could improve health outcomes of a large cohort of patients.

Objectively establishing this "Healthy Doctor = Healthy Patient" relationship should spur researchers to test various ways to promote physician health in order to promote patient health, medical schools to try to produce more avid preventionists, [12] and health-care systems to support physician health. Physician health is rarely systematically promoted anywhere in the world, suggesting that policy-makers believe physicians to already be adequately-supported. And in the few places that there are programs, they concentrate heavily on suitability and competence to practice, on mental health and illness, and on practice-related psychological motivation and physical stamina. But our profession should do more than that, and we can now do so on the most pragmatic grounds: we should try (and study) improving physicians' preventive practices, as these data suggest that patients' health could substantially benefit if we do so.

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