

Effect of Health Care Professionals' Exercise More Advice on Patients' Physical Activity Change

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Background

Clinical guidelines recommended health care professionals (HCP) to provide counseling and advice in order to promote more exercise on patients. Since HCPs have the opportunity for and are a significant resource for the promotion of more frequent exercise, and should actively use prevention strategies to enhance patients’ attention to physical activity. Studies presented patients who had been counseled has enhanced willing to increase their physical activity. This study aimed to evaluate the effects of HCPs’ advice on patients’ physical activity in U.S. adults.

Methods

Data:

This study obtained data from 2004-2008 Medical Expenditure Panel Survey (MEPS). The sampling framework provided a nationally representative sample of non-institutionalized U.S. civilians. For each panel, five rounds of interviews took place over a 2-year period. The current study used self-reported weight and height collected in round 3 as baseline and in round 5 (1 year later) as a post-advice measure to evaluate the impact of exercise more advice.

Subjects:

We included in the first round of interviews subjects who were aged ≥ 18 years, with no occurrence of pregnancy during the study period and who had had at least one visit to a doctor’s office or clinic in the previous 12 months (not including emergency visits). We excluded patients with missing body mass index (BMI) and those having extreme BMI values (≥ 78) or extreme BMI changes (< -30 or >28) or BMI below 18.5. Our final study sample was 19,863 subjects.

Study variables:

Outcome variables: Patient’s physical activity at year 2

Primary Independent variables: HCP’s advice on exercise more

Other covariates: All covariates were based on measures at baseline (in the first year of the 2-year follow-up)

Statistical analysis:

All analyses were conducted using the svy commands in Stata (version 11.2, StataCorp LP, College Station, Texas), which incorporated the MEPS longitudinal sampling weights and variance adjustment variables to provide nationally representative estimates. Student’s t test or Pearson chi-square test and Logistic regression models were used. The significance level was set to be p < 0.05.

Conclusions

Patients who reported receiving exercise more advice from HCPs did not have increased habitual physical activity after one year. Why HCPs’ exercise more advice did not have a desirable impact on their patients’ physical activity is unclear, and needs more future research. We hypothesize that there may be a complex interaction between a HCP providing advice and a patient’s memory of and reporting receiving such advice. HCPs may need to provide more systematic and effective strategies to enhance patients’ healthy exercise. More based on longitudinal data research is needed to examine whether these strategies are truly effective.

Results

Characteristics of study subjects:

In this study patients those who reported receiving advice were older, more likely to be men, more likely to be non-Hispanic black and Hispanic patients, and more likely to be overweight or obese patients. At year 1, there was lower proportion of patients with MVPA, a lower proportion of patients rating their health as excellent or very good and higher proportion of patients having a usual source of care among advice receivers.

Patients who received weight-related advice at year 1 were less likely to have habitual physical activity at year 2 compared to those who did not receive advice (exercise-related advice (yes/no): 50%/62%, p = 0.000).

Effect of HCPs’ advice on patients’ physical activity changes:

Table 2 from the regression models shows after controlling for their year-1 habitual physical activity status and other covariates, patients who reported receiving exercise advice at year 1 were less likely to have habitual physical activity in year 2, and this association was significant in all patients (OR: 0.87; 95% CI: 0.79, 0.96) and in normal-weight patients (OR: 0.81; 95% CI: 0.67, 0.96).

Table 1: Characteristics of American adults and the association with received exercise more advices, MEPS^a 2004-08

Characteristics		Received advice to exercise more ^b (N=19,863)				
		YES		NO		
		%/mean	SE	%/mean	SE	
Patients'characteristics covariates						
Age,mean year		53.1	(0.2)	47.6	(0.3)	***
Gender	Male	44.4	(0.5)	43.6	(0.5)	
Race/ethnicity ,%	Non-Hispanic white	75	(0.7)	78.9	(0.6)	***
	Non-Hispanic black	10.9	(0.5)	8.6	(0.4)	
	Hispanic	8.2	(0.4)	7.4	(0.4)	
	Others	5.9	(0.4)	5.1	(0.3)	
BMI at year1 ,%	Normal weight	20.5	(0.5)	46.6	(0.6)	***
	Overweight	35.0	(0.6)	35.3	(0.6)	
	Obese	44.5	(0.6)	18.1	(0.5)	
MVPA ^a at year1, %	Yes	50.3	(0.7)	61.7	(0.6)	***
Self-rated health status ,%	Excellent/very good	38.7	(0.6)	56.1	(0.7)	***
	Good	38.7	(0.6)	29.2	(0.6)	
	Fair/poor	22.6	(0.5)	14.7	(0.4)	
Have usual source of care, %	yes	92.6	(0.4)	86.1	(0.4)	***
Education ,%	<High school	14.4	(0.4)	14.4	(0.4)	*
	High school	31.4	(0.6)	29.2	(0.7)	
	Some college	25.2	(0.5)	24.9	(0.6)	
	College graduate	29.0	(0.7)	31.5	(0.7)	
Have usual source of care, %	yes	92.6	(0.4)	86.1	(0.4)	***
Education ,%	<High school	14.4	(0.4)	14.4	(0.4)	*
	High school	31.4	(0.6)	29.2	(0.7)	
	Some college	25.2	(0.5)	24.9	(0.6)	
	College graduate	29.0	(0.7)	31.5	(0.7)	
Employment status, %	Yes	63.0	(0.6)	67.7	(0.6)	***
Health insurance, %	Private insurance	77.0	(0.5)	75.9	(0.6)	***
	Public insurance	17.2	(0.5)	16.1	(0.5)	
	Uninsured	5.8	(0.3)	8.0	(0.3)	
Current smoking, %	Yes	16.5	(0.5)	19.6	(0.5)	**
Outcome variables						
MVPA ^a at year 2 , %	Yes					***
		50.1	(0.7)	61.7	(0.7)	

^a MEPS: Medical expenditure panel survey; MVPA, Moderate to vigorous physical activity: Currently spends half an hour or more in moderate to vigorous physical activity at least three times a week.
^b Pearson Chi square tests for categorical variables and t tests for continue variables. *p<0.05 ** p<0.01 ***p<0.001

Table 2: Influence of HCP's physical activity advices on MVPA^a at year 2, stratified by patients' weight status, MEPS^a 2004-08

Outcomes	n	Received advice to exercise more	
Having MVPA ^a at year 2		OR ^b	95% CI ^c
All patients	19,226	0.87	(0.79 , 0.96)
Normal weight patients	6,098	0.81	(0.67 , 0.96)
Overweight or obese patients	13,128	0.91	(0.81 , 1.02)

^a MEPS: Medical expenditure panel survey; MVPA, Moderate to vigorous physical activity: Currently spends half an hour or more in moderate to vigorous physical activity at least three times a week.
^b Logistic regression models adjusted for: Patients' age, gender, race/ethnicity, language spoken/used at home, BMI at year 1, MVPA at year 1, number of chronic diseases, self-rated health status, having a usual source of care, frequency of clinic visit in past year, education, employment status, insurance type, current smoking status, region, MSA and data collection year.
^c CI: Confidence intervals adjusted for the complex survey design of MEPS.

