Influence of Family History of Cardiovascular Disease on Clinicians' Preventive Recommendations and Subsequent Adherence of Patients without Cardiovascular Disease

Authors: Amy Zlot[a], Rodolfo Valdez[d], Ying Han[b], Kerry Silvey[a,e], Richard Leman[c], Robert Nystrom[a], Katherine Bradley[a]

a. Oregon Genetics Program, Public Health Division, Oregon Health Authority; b. Health Promotion and Chronic Disease Prevention Program, Public Health Division, Oregon Health Authority; c. Office of DiseasePrevention and Epidemiology, Public Health Division, Oregon Health Authority;
d. Office of Public Health Genomics, Centers of Disease Control and Prevention; e. Center for Children & Youth with Special Health Needs, Child Development and Rehabilitation Center, Oregon Health & Science University

Background:

Family history of cardiovascular disease (CVD) is an independent risk factor for CVD. Therefore, efforts to prevent CVD among asymptomatic persons with a family history are warranted.

Methods:

We used the 2007 Oregon Behavioral Risk Factor Surveillance System to evaluate associations between family history of CVD and (a) clinician recommendations; (b) adoption of preventive and screening behaviors; and (c) risk factors of CVD among 2,566 adults without CVD.

Results:

Among our sample, 38% reported having a family history of CVD. Compared with adults without family history of CVD, those with a family history reported that their clinician was more likely to ask about their family history information, discuss the risk of developing CVD, and make recommendations to prevent CVD (Table 1). People with a positive family history of CVD were almost 4 times as likely to believe that they were likely to develop CVD in the future. Family history of CVD was positively associated with having high cholesterol, having high blood pressure among people 18-55 years of age and taking aspirin (Table 2). Family history status was associated with cholesterol screening in women aged 20–44 years but not in women of other ages or in men of any age (Table 3).

Table 1. Percent distribution and likelihood of reported healthcare provider practices and recommendations by familial risk among Oregonians without CVD[a], 2007 Behavioral Risk Factor Surveillance System

		Family History of CVD		
Dependent variable (for adjusted OR)	Overall N (%)	Negative[b] n (weighted column %)	Positive[c] n (weighted column %)	Positive adjusted OR (95% CI)[d] (vs. negative family history)
	2,566[e]	1394 (61.9%)	1172 (38.1%)	
Collection of family history of heart disease or stroke by healthcare provider[f]				
No	487 (24%)	342 (30.5%)	145 (13.7%)	
Yes	2001 (76%)	999 (69.5%)	1002 (86.3 %)	2.6 (1.9–3.4)[g]
Discussion of CVD risk by healthcare provider				
No	1472 (62.2%)	934 (70.7%)	538 (48.2%)	
Yes	1052 (37.8%)	439 (29.3%)	613 (51.8 %)	2.0 (1.6–2.5)[h]
Lifestyle change recommendations by healthcare provider				
No	1500 (63.4%)	935 (71.4%)	565 (50.3%)	
Yes	1046 (36.6%)	454 (28.6%)	592 (49.7 %)	2.1 (1.7–2.7)[h]

[a] CVD, cardiovascular disease.
[b] No first-degree relatives with heart disease or stroke or adopted with unknown family history status of blood relatives.
[c] At least one first-degree relative diagnosed with heart disease or stroke.
[d] OR, odds ratio; CI, confidence interval.
[e] Numbers for some variables do not total 2,566 because of missing data.
[f] Among respondents who reported that their health care provider collects general family history information.
[g] Adjusted for sex.
[h] Adjusted for high cholesterol.

Table 2. Percent distribution and likelihood of perceived risk, preventive behaviors, and CVD risk factors by familial risk among Oregonians without CVD, 2007 Behavioral Risk Factor Surveillance System

		Family History of CVD		
Dependent variable (for adjusted OR)	Overall N (%)	Negative n (weighted column %)	Positive n (weighted column %)	Positive adjusted OR (95% CI) (vs. negative family history)
Perceived risk of CVD				
Not at all or slightly likely	1210 (54.1%)	832 (66.1%)	378 (34.7 %)	
Very or somewhat likely	1182 (45.9%)	457 (33.9%)	725 (65.3%)	3.7 (3.0–4.5)
Reported lifestyle changes				
No	936 (40.8%)	633 (48.8%)	303 (27.9%)	
Yes	1618 (59.2%)	753 (51.2%)	865 (72.1%)	1.9 (1.5–2.4)[a]
Current smoker				
No	2193 (84.5%)	1179 (83.8%)	1014 (85.8 %)	
Yes	359 (15.5%)	207 (16.2%)	152 (14.2%)	0.9 (0.6–1.1)
Taking low-dose aspirin				
No	1844 (78.7%)	1062 (82.4%)	782 (72.7%)	
Yes	720 (21.3%)	331 (17.6%)	389 (27.3%)	1.3 (1.0–1.6)[b,c]
High blood pressure				
No	1769 (76.8%)	1049 (82.7%)	720 (67.2%)	
Yes	795 (23.2%)	345 (17.3%)	450 (32.8 %))	Overall: 1.6 (1.3–2.1)[d] Age 18–54 years: 2.4 (1.7–3.5)[d] Age 55–64 years: 1.2 (0.8–1.7) Age 65+ years: 1.0 (0.7–1.5)[d]
High cholesterol				
No	1311 (71.3%)	727 (71.3%)	584 (59.5%)	
Yes	836 (28.7%)	362 (28.7%)	474 (40.5%)	1.5 (1.2–1.8)

[a] Adjusted for high cholesterol.
[b] Adjusted for high cholesterol and high blood pressure.
[c] $p < 0.5$.
[d] Adjusted for high cholesterol and obesity.
[e] Adjusted for having a personal doctor/health care provider.

Table 3. Cholesterol screening within the past five years by family history, sex, and age among Oregonians without CVD[a], 2007 Behavioral Risk Factor Surveillance System

	Cholesterol screening		
	Negative family history of CVD n (weighted row %)	Positive family history of CVD n (weighted row %)	Positive family history of CVD adjusted OR (95% CI) (vs. negative family history)
Overall (all ages, males and females)	981 (63.3%)	997 (82.6%)	1.5 (1.0–2.3)[b]
Males			
Age 20–34 years	39 (39.5%)	11 (52.9%)	0.7 (0.1–4.6)
Age 35+ years	354 (75.1%)	277 (85.2%)	1.3 (0.6–2.5)[b]
Females			
Age 20–44 years	173 (57.1%)	101 (66.5%)	1.6 (1.0–2.6)[c]
Age 45+ years	408 (87.9%)	608 (93.8%)	1.4 (0.7–2.6)[b]

[a] Based on US Preventive Services Task Force screening recommendations for lipid disorders in adults
[b] Adjusted for high cholesterol.
[c] $p < 0.5$.

Implications for Public Health Policy and Future Research

Our study suggests clinician awareness of CVD family history is associated with risk factor screening and recommendations for healthy lifestyle changes. These actions by clinicians promote risk factor reduction and may help reduce CVD prevalence. In order to accomplish this objective, clinicians need efficient decision-support tools and consistent evidence-based guidelines related to family history.

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Acknowledgments: This study is dedicated to A.I. Zlot's uncle, Chuck Sabes, and was supported in part by a cooperative agreement from the Centers for Disease Control and Prevention (U58/CCU022779-04). Health Promotion Programs, Component 7, and Genomics and Chronic Disease Prevention.