

How cardiologists' lipids compare to the general population? An online survey.

Amir Khan^{1*}, John Hickernell², Nicole Cho¹, Saniya Khan³, Martha Gulati⁴, Danielle Belardo⁵, Mladen I. Vidovich⁶

¹Department of Internal Medicine, University of Illinois-Chicago, Illinois, United States

²Department of Internal Medicine, Loyola University Medical Center, Illinois, United States

³Department of Internal Medicine, Loyola University Chicago, Chicago, United States

⁴Department of Cardiology, Cedars Sinai Heart Institute, Los Angeles, United States

⁵Department of Internal Medicine, Institute of Plant-Based Medicine, California, United States

⁶Department of Cardiology, University of Illinois-Chicago, Illinois, United States

Abstract

There has been limited investigation into the cardiovascular health of cardiologists. The goal of this study is to elucidate the lipid profiles of cardiologists and compare them with those of the general population. Practicing cardiologists across the U.S. completed a Qualtrics survey providing demographic, occupational, examination, and laboratory data. Comparative general population data was gathered through NHANES. Multivariate regression analysis demonstrated the predictor variable of cardiologist to be statistically significant in all adjusted models. This was seen most strongly in LDL and total cholesterol, which were 37.7 ± 4.5 mg/dl ($p < 0.001$) and 35 ± 4.9 mg/dl ($p < 0.001$) lower respectively, for cardiologists compared with the NHANES population. Triglycerides were 23.7 ± 11.2 mg/dl ($p < 0.05$) lower and HDL was 5.5 ± 2.5 mg/dl ($p < 0.05$) higher for cardiologists. Cardiologists are likely to be more mindful towards the maintenance of their own cardiovascular health given their expertise and understanding of cardiovascular disease risk factors.

Keywords: Cardiovascular health, Cardiologist, Cardiovascular disease, NHANES dataset.

Introduction

An unfavorable lipid profile has been identified as an important risk factor in Cardiovascular Disease (CVD) [1]. With steep rises in such risk factors predicted in coming years, counselling patients towards preventive therapies that target lipid levels is essential. Multiple studies have demonstrated the positive relation between physicians' and patients' preventive health practices [2]. Physicians who ate more fruits and vegetables were more likely to counsel their patients about nutrition [3]. There has been limited investigation into the cardiovascular health of cardiologists. The goal of this study is to elucidate the lipid profiles of cardiologists and compare them with those of the general population.

Methods

Practicing cardiologists across the United States received a Qualtrics survey link through email or accessed the link shared by colleagues on Twitter. Of the 1538 surveys distributed through email and the links shared on Twitter, a total of 114 (7.4%) surveys were completed. Most responses came through the email recipients (74/114). Many respondents practiced

non-invasive cardiology with a similar proportion coming from either an academic or private setting. Responses came from across all regions of the U.S. Demographic, occupational, examination, and laboratory data was gathered which included lipid profiles. Comparative U.S. general population data was obtained through the 2017-18 National Health and Nutrition Examination Survey (NHANES) dataset. NHANES participants under the age of 30 were excluded (Table 1). Data were analyzed using multivariate linear regression for LDL, HDL, triglycerides, and total cholesterol. Several models were created adjusting for gender, race, age, education, body mass index, blood pressure, hypertension, diabetes, and use of lipid medications. Multivariate regression analysis was performed using R software.

Results

All adjusted models demonstrated the predictor variable of cardiologist to be statistically significant. This was seen most strongly in LDL and total cholesterol, which were 37.7 ± 4.5 mg/dl ($p < 0.001$) and 35 ± 4.9 mg/dl ($p < 0.001$) lower respectively, for cardiologists compared with the NHANES

*Correspondence to: Amir Khan, Department of Internal Medicine, University of Illinois-Chicago, Illinois, United States, E-mail: akhan202@uic.edu

Received: 01-Jun-2023, Manuscript No. AACHD-23-103516; Editor assigned: 05-Jun-2023, PreQC No. AACHD-23-103516(PQ); Reviewed: 19-Jun-2023, QC No. AACHD-23-103516; Revised: 23-Jun-2023, Manuscript No. AACHD-23-103516(R); Published: 30-Jun-2023, DOI:10.35841/aachd-7.3.155

Table 1. Characteristics of NHANES population versus cardiologists.

	NHANES (n=2019)	Cardiologists (n=114)
Demographics		
Age-years (SD)	56 (15)	50 (12)
Male-no. (%)	963 (48)	88 (77)
Race		
White-no. (%)	683 (34)	76 (67)
Black-no. (%)	465 (23)	6 (5)
Asian - no. (%)	295 (15)	24 (21)
Hispanic - no. (%)	470 (23)	4 (4)
Other-no. (%)	106 (5)	4 (4)
Education		
Graduate-no. (%)	490 (24)	114 (100)
Some College-no. (%)	622 (31)	0
Up to High school - no. (%)	905 (45)	0
Comorbidities		
Hypertension-no. (%)	724 (63)	22 (19)
Diabetes Mellitus-no. (%)	396 (20)	5 (5)
On lipid lowering medication-no. (%)	517 (73)	31 (28)
Clinical Data		
BMI-kg/m2 (SD)	30 (7)	24.5 (3)
Systolic BP-mmHg (SD)	129 (21)	117.5 (9)
Diastolic BP-mmHg (SD)	73 (13)	73 (9)
LDL-mg/dl (SD)	112 (37)	97 (31)
HDL-mg/dl (SD)	54 (16)	58 (19)
Triglyceride-mg/dl (SD)	111 (63)	102 (60)
Cholesterol-mg/dl (SD)	188 (42)	174 (32)

population. Triglycerides were 23.7 ± 11.2 mg/dl ($p < 0.05$) lower and HDL was 5.5 ± 2.5 mg/dl ($p < 0.05$) higher for cardiologists.

Discussion

Our study has limitations to note with regards to the collection of cardiologist data. The survey was self-reported and was not validated with laboratory reports. The findings were likely impacted by a non-response bias and social desirability bias. However, the sample of cardiologists who completed the survey was well distributed in terms of age and regionality. A limited number of surveys were completed by African American, Hispanic and women cardiologists, which is representative of the diversity in cardiology but obviously differs from the NHANES population.

Our findings highlight the difference in the cardiovascular health profiles of cardiologists and the general population. Despite adjusting for various non-modifiable risk factors and other confounding variables, cardiologists demonstrated significantly better lipid profiles. This suggests cardiologists are likely to be more mindful towards the maintenance of their own cardiovascular health given their expertise and understanding of cardiovascular disease risk factors. This is also demonstrated through the notable difference in the average examination data of the cardiologists *versus* the average examination data of NHANES participants such as BMI and systolic blood pressure.

The ability to implement one's own knowledge of cardiology into self-betterment is only the first part of the journey to become an effective practitioner in cardiology. This study highlights the significant impact a strong understanding of cardiovascular diseases and access to related resources can have on an individual's cardiovascular health. The findings serve as a steppingstone in helping identify the factors creating such a profound difference in cardiovascular health status between practitioner and patient. A lot more effort will need to be put forth to ensure patients have a deep understanding of their cardiovascular health and the preventive measures needed to mitigate disease. With the worldwide epidemic of cardiovascular disease and steep rise in the incidence of risk factors contributing to it, these changes at the root of the issue are extremely vital.

References

1. Graham I, Cooney MT, Bradley D, et al. Dyslipidemias in the prevention of cardiovascular disease: Risks and causality. *Curr Cardiol Rep.* 2012;14:709-20.
2. Frank E, Dresner Y, Shani M, et al. The association between physicians' and patients' preventive health practices. *Cmaj.* 2013;185(8):649-53.
3. Frank E, Segura C, Shen H, et al. Predictors of Canadian physicians' prevention counseling practices. *Can J Public Health.* 2010;101:390-5.